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# Increasing Income from South Dakota Resources: Papers Presented at the Third Annual Agri-Business Day

South Dakota Agricultural Experiment Station

Department of Economics, South Dakota State University

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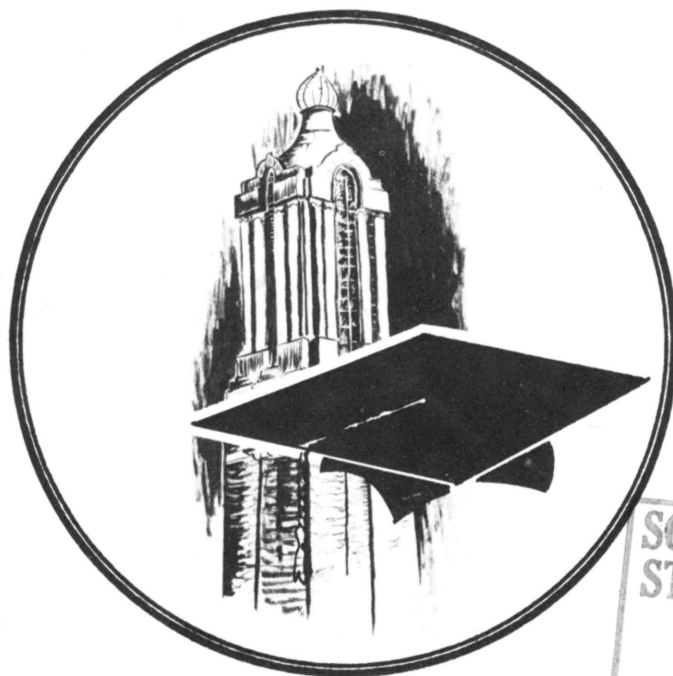
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# INCREASING INCOME FROM SOUTH DAKOTA RESOURCES

Papers Presented At The  
THIRD ANNUAL AGRI-BUSINESS DAY  
Tuesday, April 7, 1964



presented by  
Economics Department South Dakota State Brookings, South Dakota  
**AGRICULTURAL EXPERIMENT STATION**

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## Introduction

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Dr. John E. Thompson

Extension Economist - Rural Area Development

The Third Annual Agri-business program was not only the product of many hours of preparation and planning during the past few months, it was also a logical development from the planning and efforts associated with previous Agri-business Day Programs.

As Economists, one of our main concerns is how we might assist in improving the level of living of the people of this state. To do this it is necessary that we first have a complete understanding of the nature and characteristics of the resources of the state upon which economic growth and development depends. Thus, the theme of our first Agri-business Day Program was "Foundations for Economic Development."

After acquiring an understanding of basic resources upon which we might build it was necessary to recognize the trends in social and economic activity that can be expected to affect future economic development opportunities in South Dakota. Social and economic changes create as well as restrict economic development opportunities. Thus, the program for the second annual Agri-business Day was on trends and projections with the theme "Projecting South Dakota into a Growing Society."

After determining what resources we have, and what changes have and might be expected to take place a logical next step was to consider what might be done to achieve more rapid economic growth.

Thus, the third annual Agri-business Day Program was largely directed to the questions of how the major resources might be more fully developed and how the people of the state might take advantage of changes taking place both within and outside of the economy of South Dakota.

As increasing income is closely related to resource development, the program was structured to include a consideration of resources most directly influencing levels of personal income. The theme of this third Agri-business Program was "Increasing Income from South Dakota Resources."

This program was divided into three major parts. The first concerned primarily ways to expand economic activity and higher levels of income through development of human resources. The role of attitudes and return on investments in human capital were given special consideration. Human resource development was placed at the head of the program as it is recognized that all economic development has its inception in the thinking processes of man.

The second part of the program was built around ways of generating income through the development of physical resources. The potentials for increasing income from crops, livestock, processing and marketing, and from recreational development were treated in separate presentations.

The third and final part was designed to show how income can be generated through sound management. Aspects of major importance in management were pointed out in three presentations--one on business management, one on financial management, and the last on tax management.

The keynote address laying the groundwork and creating a setting for the presentations was a review of the major sources of income in South Dakota and how income can be expanded.

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### Major Sources of Income In South Dakota and How Income Can Be Expanded

Dr. Ralph E. Nelson  
Associate Professor

South Dakota is in the midst of a fashionable game of economic development. The general goal of the game is to accelerate the rate of economic growth so that each person in South Dakota ends up with more income or the goods and services which income will purchase.

The players in this game are the people of the state. Most of them play as private entrepreneurs; some of the players join together in cooperatives, while a few of the players are corporations. All of the players are responsible for reaching the goal of higher income per player in the state.

The various units of government (local, state, and federal) act as groundskeeper and referee. As groundskeeper they are concerned with the conditions of the playing field. It should be a solid and well lit, in short, a fast field so that the players are sure of their footing and can see a long distance ahead. As referee they enforce the rules of the game and occasionally change the rules so that some players do not get too badly hurt.

The score of the game is measured in terms of personal income per player. The game is on, so let us tune in for a minute and get the score.

We are now on the playing field. South Dakota has the ball on its 1964 yard line. The last recorded score was 2065 dollars of personal income for every player on the field. This score was recorded when South Dakota was on the 1962 yard line. Let us focus on the scoreboard so we can review the progress of the game.

The depression and drought of the 1930's were slump years when the income per player never exceeded 400 dollars and the average income for the 10 years was 261 dollars. Part of the increased score since the thirties is due to inflation, but when we eliminate the inflation factor, we find that the 1962 score of \$2065 per player is 4 1/2 times larger than the average of the thirties.

The South Dakota team has also gained relative to the per player in the United States. In the thirties, per player in South Dakota averaged 50.8% of per player in the United States, while in the last 10 years it has averaged 77%. While this represents progress, we are still playing with a somewhat less than average ball club, causing some of the better players to leave the state.

### Sources of Income

Income is generated by players so if we are to understand income generation we will have to study the players--their location, activities, and motivation.

Let us, first, locate the players on the field--33.7% are in the Southeast Region, 26.1% in the Northeast, 14.5% in the Central, 9.4% in the West Central, and 16.3% in the Black Hills Region. Almost 60% of the players are in the Southeast and Northeast Regions combined and almost three-fourths of the players are east of the Missouri River. <sup>1/</sup> The players have been shifting their location through time, moving away from the center of the field and toward the Black Hills and Southeast Region. The Black Hills Region has had a 63.6% increase in players since 1930 and a 29.1% increase in the last 10 years. The Southeast Region has had a 6.9% increase since 1930 and 5.1% has occurred since 1950.

If we measure the net migration of players from 1950-1960 we find that only three counties have had a positive net migration. <sup>2/</sup> These are Stanley, Hughes, and Pennington Counties. These are also counties with a high degree of federal construction activity.

The players are also shifting from rural areas to cities of 2500 players or more. The percentage of players living on farms and in communities of less than 2500 has decreased from 89.8% in 1900 to 81.1% in 1930 and 61.0% in 1960 (Table III).

The distribution of income among the regions follows a pattern similar to the distribution of players (Table IV).

The source of income can also be classified by the various positions which the players play or the type of economic activity (Table V).

Wages and salaries are the major sources of income in South Dakota and account for a little less than 50% of total income. Within this category, government (federal, state, and local) has the largest payroll while wholesale and retail trade ranks second.

The second largest source of income is agricultural. The single outstanding characteristic of agricultural income is its erratic nature. In 1961 net agricultural income was \$233 million and in 1962 was \$357 million, or an increase of 53%. Other sources of income have been more dependable.

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<sup>1/</sup> These percentages are based on the 1960 U.S. census data.

<sup>2/</sup> Net migration was calculated by using 1950 as a base year, adding the 1950-1959 births, subtracting the deaths during the same period, and comparing the resulting figure with the 1960 population.

When we focus on agricultural income we find three sources--cash receipts from crops, cash receipts from livestock, and government payments to farmers (Table VI).

The averages for the past 10 years show that crops have provided the farmers with 25.8%, livestock 69.4%, and government payments with 4.8% of their total cash income. Government payments have increased as a percentage of total income in every year but one in the last 10 years, and when measured as a percentage of net farm income, accounted for 13.4% of the total 10 year net income. And for the past 5 years, government payments have accounted for 19.1% or almost one-fifth of net farm income (Table VII).

### Income Expansion

We now have a general picture of the geographical location of the players on the field, the positions played by the players, and the share of the score contributed by the groups of players. We must get on with the game, however, and concern ourselves with the task of increasing the score. This task will be left primarily to the coaches who follow me on this program, and the program is so full of coaches it looks like a high school faculty.

The main responsibility of the coaches will be to find sources of additional income and then to choose the cheapest source or combination of sources. This is a complex job but can be simplified by classifying additional income into that which comes from (1) better management of existing resources (2) expansion of resources, and (3) additional income from outside of the state. Management of resources (natural, man-made, and human) is both a private and a public responsibility. The management of resources within the firm is considered as private. This includes the utilization of labor, land, buildings, inventories, capital, etc. so as to maximize the score. Much of the public management responsibility is related to its role as overseer. An economist would call this "management of the infrastructure," which includes education, roads, research, dams, water and sewage systems, etc. Better management of resources, private and public, is the bargain basement of this development game but is not as colorful as the second category--the expansion of resources.

Expansion of natural and human resources is primarily a public responsibility. Now this takes some careful defining, as many of you may think that the expansion of the human resource is strictly private. By expansion of human resources I do not mean an expanding population. You will remember that, in this game, the score is measured in terms of income per player, so an increased number of players results in a smaller score for each player unless each new player makes an average or above contribution to the score. By an expansion of human resources I do mean an increase in the productive capacity of each player. This production capacity includes their (1) knowledge, (2) skills, (3) ability to identify and solve problems, and (4) ability to search out profitable opportunities. Human resources can be expanded through increased general education, vocational education, adult education, on the job training, problem-solving experiences, proper attitudes, and improved health.

Natural resources can be expanded through research, exploration, and development. The three primary natural resources of South Dakota are land, water, and recreational areas. Land can be expanded by irrigation, flood control, and land reclamation. Water can be expanded by impounding it and distributing it over a longer period of time as well as utilizing a greater share of the water for productive purposes. Recreation can be expanded by increasing its attractiveness to South Dakotans and people from other states.

Man-made resources include buildings, equipment, plants, productive inputs such as fertilizer and seed, and let us not forget research results. The latter is too often forgotten and ill understood.

The third source of income is from outside of the state. The two primary income streams which flow inward are recreational expenditures from non-residents and federal government expenditures in South Dakota. The program has a coach who will discuss recreation but there is no coach to explain the role of the federal government in generating income in South Dakota. I would like, therefore, to say a few words on this subject.

Economic growth is primarily a function of the environment. Horizontally this environment includes the home, school, church, community, state, and nation. Vertically the environment includes the attitudes, knowledge, culture, capital goods, technological knowhow, and management ability of the people.

These environmental forces, however, are cumulative so that with each successive generation the players who perform in an environment favoring development have an increasing advantage over the players performing in a less favorable environment. This is true among individuals, among areas within a nation, and among nations. This is occurring today in the international arena as the income gap between the have and the have-not nations is becoming greater. It is not occurring within the United States because the federal government, as the primary overseer, has recognized this inherent tendency in the game and has attempted to counterbalance it.

Sometimes this counterbalance takes the form of improving the playing field in certain areas. The Tennessee Valley Authority and other federally financed resource development projects are examples. Sometimes the rules of the game are designed to counterbalance this inherent tendency. The federal farm programs were established to reduce the disparity of income between the farm and non-farm sector. The present war on poverty is a program aimed at making slight changes in the game so as to reduce the disparity among individuals.

Maybe the people of South Dakota should re-evaluate the role of the federal government in this respect. Maybe our attitudes should favor greater improvement of the playing field, improved training of the players, and playing rules which favor regions with per player income below the national average. We accept federal money for highways, river development, land grant college research, farm programs, small business development, defense, etc.

This federal assistance is concentrated mainly on improving the conditions of the playing field (highways, irrigation, river development). It has neglected the training of the players. Why? John Galbraith has said "To the best of my knowledge there is no place in the world where a well educated population is poor." Why are we as willing to accept federal financing of our highways as we are adamant in refusing federal financing of our educational plant? Are the players less important than the field? I believe that the players on the South Dakota team should favor federal aid to all levels of education, federal aid to vocational training, federal retraining programs to provide the technologically unemployed with an opportunity to re-enter the game. They should also favor further improvement of the playing field.

### Summary

The importance of the players has been emphasized throughout this paper. The score of the game has been kept in terms of personal income per player. It is the players who convert the other resources into goods and services. And as we develop programs for income expansion it is important that these programs give all of the players an equal opportunity to prepare for and play in the game and also that the South Dakota players have the same opportunities as the players in other states.

## APPENDIX

Table I. Per Player Personal Income,  
South Dakota and United States  
1929-1962

<u>Year</u>	<u>South Dakota</u> (Dollars)	<u>United States</u> (Dollars)	<u>S.D. as a Percentage of U.S.</u> (Percent)
1929	417	703	59.3
1930	358	624	57.4
1931	239	529	45.2
1932	188	401	46.9
1933	129	375	34.4
1934	179	423	42.3
1935	300	472	63.6
1936	240	534	44.9
1937	319	573	55.7
1938	316	527	56.0
1939	340	556	61.2
1940	359	595	60.3
1941	470	719	65.4
1942	742	909	81.6
1943	816	1,102	74.0
1944	950	1,194	79.6
1945	1,047	1,234	84.8
1946	1,083	1,249	86.7
1947	1,232	1,316	93.6
1948	1,451	1,420	102.2
1949	1,094	1,382	79.2
1950	1,216	1,491	81.6
1951	1,416	1,649	85.9
1952	1,244	1,727	72.0
1953	1,345	1,788	75.2
1954	1,375	1,770	77.7
1955	1,279	1,866	68.5
1956	1,356	1,975	68.7
1957	1,600	2,048	78.1
1958	1,675	2,064	81.2
1959	1,513	2,163	69.9
1960	1,845	2,217	83.2
1961	1,827	2,267	80.6
1962	2,065	2,366	87.3

Source: U.S. Department of Commerce, Office of  
Business Economics, Personal Income by States,  
1929;  
Survey of Current Business, August issues, 1963.



Table II. Percentage Changes in Players  
by Regions of South Dakota  
1930-1960 and 1950-1960

<u>Regions</u>	<u>1930-1960</u> (Percent)	<u>1950-1960</u> (Percent)
Southeast	+ 6.9	+ 5.1
Northeast	- 9.2	- 2.0
Black Hills	+63.6	+29.1
East Central	-22.0	- 4.6
West Central	-27.8	- 0.4
South Dakota	- 7.2	+ 4.3

Source: U.S. Bureau of the Census.

Table III. Percentage of Rural and Urban  
Players in South Dakota by  
Selected Years 1900-1960

	<u>Population</u> (000)	<u>Urban</u> (Percent)	<u>Rural</u> (Percent)
1900	402	10.2	89.8
1910	584	13.1	86.9
1920	637	16.0	84.0
1930	693	18.9	81.1
1940	643	24.6	75.4
1950	653	33.1	66.9
1960	681	39.0	61.0

Source: U.S. Bureau of the Census.

Table IV. Distribution of Income and Percentage  
Change in Income in South Dakota by  
Regions, 1960

<u>Region</u>	<u>Income</u> (Dollars 000)	<u>Percentage</u> of Total Income (Percent)	<u>Percentage</u> of Total Players (Percent)	<u>Percentage</u> Increase over 1950 Income (Percent)	<u>Income Per</u> Player (Dollars)
Southeast	415,619	32.9	33.7	52	1814
Northeast	316,593	25.1	26.1	42	1784
Central	198,879	15.8	14.5	20	2020
West Central	129,494	10.2	9.4	13	2025
Black Hills	201,939	16.0	16.3	138	1811
Total	1,262,522				

Table V. Personal Income in South Dakota  
by Type of Economic Activity,  
Selected years 1930-1962

Year	Type of Economic Activity						
	Wages and Salaries (1,000,000 dollars)					Proprietor Net Income (1,000,000 dollars)	
	Total	Manufacturing	Services	Federal Government	Local and State Government	Farm	Non-farm
1930	119	10	12	7	12	66	28
1935	98	7	8	14	21	62	18
1940	112	10	9	20	16	57	28
1945	240	20	17	81	23	245	62
1950	342	33	36	37	43	241	88
1955	434	44	48	62	57	150	112
1960	579	59	57	71	84	306	142
1961	644	68	65	73	91	233	166
1962	701	70	75	78	98	357	173
Percentage of Personal Income							
1930	48.0	4.0	4.8	2.8	4.8	26.6	11.3
1935	49.5	3.5	4.0	6.9	10.4	30.7	8.9
1940	48.7	4.3	3.9	8.7	7.0	24.8	12.2
1945	40.0	3.3	2.8	13.5	3.8	40.8	10.3
1950	43.1	4.2	4.5	4.7	5.4	30.4	11.1
1955	51.0	5.2	5.6	7.3	6.7	17.6	13.2
1960	45.7	4.7	4.5	5.6	6.6	24.2	11.2
1961	49.8	5.3	5.0	5.6	7.0	18.0	12.8
1962	47.1	4.7	5.0	5.2	6.6	24.0	11.6

Source: Personal Income by States and Survey of Current Business, August 1963,  
U.S. Department of Commerce.

## The Role of Attitudes in Generating Higher Levels of Income

Dr. S. Ray Schultz  
Associate Professor

If income from South Dakota resources is to be increased, this will be accomplished by people. Probably nobody would disagree with that statement; yet, also, there is difficulty in getting any mileage out of that statement for the task of generating higher levels of income. More concreteness is needed.

As a step toward more concreteness, this paper focuses attention upon individual decision-makers. Initially, the main effort is toward seeing what they are up against.

Four key concepts are used--(1) predisposition factors, (2) situation factors, (3) behavior, and (4) outcome. They are taken from a 1962 report of research done at Michigan State University. <sup>1/</sup>

Predisposition factors refer to forces within an individual which lead him to react in a certain way in a particular situation. Examples of predisposition factors would include attitudes, beliefs, and values. Some psychologists indicate that having a certain attitude does not necessarily mean that the person will act; but given a particular attitude, if a person does act, then the action is very likely to be consistent with the attitude. In this context, prejudices come immediately to mind: A person may have a prejudice (a negative attitude) toward a particular race or society, but do nothing about it.

On the other hand, beliefs evidently involve a necessary connection between a mental outlook and action. Beliefs, then, may be regarded as a "higher order" of predisposition factor: Given a particular belief and a particular set of circumstances, a particular action is expected to be forthcoming. However, the particular circumstances are not easily evaluated, at least by the "outsider." A major reason is that people hold more than one belief, and that in particular situations these beliefs may be in conflict. Presumably, those beliefs that are "held most dear" are the ones that will predispose the individual to a particular action. Of course, the meaning of "value" is involved here: Value refers to the degree of importance attached to particular beliefs. <sup>2/</sup>

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<sup>1/</sup> James Nielson, The Michigan Township Extension Experiment: The Farm Families..Their Attitudes, Goals, and Goal Achievement (Michigan State University, East Lansing, Michigan, 1962), Technical Bulletin 297.

<sup>2/</sup> John M. Brewster, "The Achievement Motive and Entrepreneurial Behavior," in A Symposium on Measuring Managerial Ability of Farmers (North Central Regional Research Committee on The Management Resource in Farming (NC-59) and the Farm Foundation, December 17 and 18, 1962), p. 17.

The second key concept being used in an effort to visualize what individual decision-makers are up against is the concept, "situation factors." In general, "the situation" simply refers to the environment of the decision-maker. Borrowing from Nielson,<sup>3/</sup> examples would include agricultural production possibilities, such as the climate and the type of soil; off-farm work opportunities; and, for any decision-maker in business, the family situation and the beliefs, values, and general mental outlook of the larger social environment.

As Nielson points out, the importance of the "situation factors" is that, on the one hand, they contain opportunities. But on the other hand, they also involve limits to what the decision-maker can do.

The third key concept is "behavior." This word simply refers to what the decision-maker does. What actions does he take? For a farm operator, examples of such action would include switching from a cash-crop operation to a crop-livestock operation, adopting a minimum-tillage operation, and so on.

The fourth key concept is "outcome." This word refers to the results of action taken, after the individual decision-maker has "behaved" in terms of his own predispositions and the limits and opportunities allowed by his environment. Of course, the main outcome of interest in this paper is net income.

Now, the four key concepts provide a framework useful for analysis of the role of attitudes in generating higher levels of income. For example, it was observed that predisposition factors predispose a decision-maker to a certain kind of action. But it appears that some predisposition factors are stronger than others. Also, some predisposition factors surely do not favor economic development at all, while others may be closely related to economic development.

Would it not be nice if some predisposition factor could be found that has the following characteristics: (1) It involves a strong relationship between mental outlook and action; and (2) It favors economic development. Such a predisposition factor has been found as a result of massive research efforts conducted in the 1950's by David McClelland and his associates, under a Ford Foundation grant. The main results of these efforts are reported in The Achieving Society.<sup>4/</sup>

McClelland calls the main predisposition factor "need for achievement." Individuals may have either a high or a low level of need for achievement. Those with a high level have the strong need for proving themselves as go-getting innovators.<sup>5/</sup> There is evidently a strong relationship between this type of mental outlook and the type of action taken. Brewster<sup>6/</sup> says that people with high need for achievement are

<sup>3/</sup> Nielson, op. cit., p. 5.

<sup>4/</sup> David Clarence McClelland, The Achieving Society (D. Van Nostrand, Princeton, New Jersey, 1961).

<sup>5/</sup> Brewster, loc. cit., p. 35.

<sup>6/</sup> Brewster, loc. cit., p. 15.

almost always on the move, almost always doing things so as to obtain "... concrete evidence of their personal value...." They need to perform better and better. When they fail, they look upon these failures as evidence of a lack of personal worth. Evidently there is a definite and strong tie-in between mental outlook and action.

A high need for achievement also favors economic development, according to McClelland. Looking at many different societies as a whole, he found that when any society had a high proportion of people possessing a high need for achievement, that society had relatively rapid economic development.

Even more specifically, as Brewster points out, those who have a high need for achievement also have the main qualities of personality that are characteristic of the entrepreneur.<sup>7/</sup> Following is a list of qualities of those who have high need for achievement, gleaned by Brewster<sup>8/</sup> out of McClelland's book:

These persons have "...leadership capacity, high level intelligence, ability to organize materials and men; capacity for evaluating critical situations quickly and accurately, seeing new angles, guiding present decisions by long-range perspective of future possibilities, preferring larger distant rewards to smaller present one's generating one's own directives, being a self-starter, and being on one's toes and being a courageous risk-taker in the confidence one can turn uncertain situations to good advantage."

Some expansion of the risk-taker quality seems appropriate here. Evidently, persons with high need for achievement are willing to take risks, but moderate risks and not risks with a very low probability of success. These persons want success to be quite possible, as a result of their own efforts, and not of mere chance.<sup>9/</sup> This suggests something about the necessary qualities of the situation factors, if entrepreneurs are to be highly active: As a minimum, a dependable political environment is necessary.

The assigned task of this writer was to discuss the role of attitudes in generating higher levels of income. It has seemed appropriate to broaden the scope of the paper and discuss predisposition factors in general, and then to focus attention upon one predisposition factor: the need for achievement as described by McClelland. For, if McClelland is taken seriously, the need for achievement turns out to be the key factor in obtaining economic development.

Under McClelland's analysis, some of the factors usually associated with rapid economic development now appear to have a less significant role. Several examples are worth noting here. First, it is widely held that population growth in some countries "

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<sup>7/</sup> Brewster, loc. cit., p. 54.

<sup>8/</sup> Brewster, loc. cit., p. 14.

<sup>9/</sup> Brewster, loc. cit., p. 37.

should be reduced if economic development is to be speeded up significantly. But a program to reduce population growth might decrease population growth in all classes, and might even reduce population growth more in the classes from which the largest number of persons with high need for achievement would have come.<sup>10/</sup> Consequently, a population-reducing scheme might actually impede economic growth.

Second, it seems obvious that capital is crucial if economic development is to take place. But it is no secret that the same amount of capital let loose in different countries does not have the same results in all countries. McClelland found that capital had more positive results in countries where there were the higher proportions of people with a high need for achievement.<sup>11/</sup>

Third, it might appear that countries having more natural resources will necessarily have more rapid economic growth. Or, at least, it would seem that countries poorly endowed with natural resources would grow less rapidly than others. But in McClelland's view, the crucial resource is a special kind of person, i.e., a person with high need for achievement. This special kind of person might find ways of obtaining rapid economic growth by, say, finding ways to utilize natural resources that formerly appeared very unpromising.<sup>12/</sup>

Then persons who survey the natural resources of South Dakota and conclude that "South Dakota doesn't have much" may find in McClelland's research a new source of hope. Certain natural resources appear extremely difficult to import. But perhaps South Dakota could obtain - or already has - a high proportion of people with a high need for achievement. At least, if this particular sort of person is the crucial resource, it is well to know this, so that undue emphasis is not put upon less useful resources.

Fourth, some would say that where a high level of commercial activity is found, that sort of environment will tend to generate its own entrepreneurs and thus furnish its own basis for further economic growth. But McClelland's research does not support this position. He found that extrinsic rewards did not entice persons with high need for achievement into completing tasks earlier or better than others. In fact, he found that persons with low need for achievement responded "better."<sup>13/</sup>

Again, perhaps South Dakota is in a more favorable position than some have thought with regard to possibilities for economic growth. The lack of a humming commercial activity such as evidently exists in California may not in itself invalidate possibilities of having the people who are crucial to economic growth. Further, perhaps

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<sup>10/</sup> McClelland, op. cit., p. 424.

<sup>11/</sup> McClelland, op. cit., pp. 421 and 423, et passim.

<sup>12/</sup> McClelland, op. cit., pp. 421-422, et seq.

<sup>13/</sup> McClelland, op. cit., pp. 425-426, et seq.

the most important way to obtain these people is not by offering high financial rewards, but rather by providing the right sort of environment.

McClelland also found that neither a wide-spread feeling of optimism nor belief in progress was related to economic development.<sup>14/</sup> He does not say that the presence of these attitudes "works against" economic growth, and it is difficult to imagine that this would be the case. But a reasonable inference for South Dakota might be that undue faith should not be put into generating a feeling of optimism or of a "belief in progress."

#### Summary, Conclusions, and Recommendations

This paper deals with predisposition factors and their role in generating higher levels of income. In this context, considerable emphasis is put upon McClelland's findings. According to McClelland, the main predisposition factor is the need for achievement. In fact, the crucial resource in a society turns out to be a large proportion of persons who have a high need for achievement. The activity of these persons seems to lead to economic development, even in a society that is not highly endowed with natural resources. Yet, these very special people evidently do not obtain outstanding results in just any environment. As a minimum, they apparently want an environment that offers reasonable chances of success as a result of their own efforts.

It is suggested that South Dakota may be in a more favorable position for economic growth than some people think. The main point here is that even if certain natural resources appear to be lacking, this of itself does not obviate the possibilities of economic growth. For, following McClelland, the vital resource is a special kind of people. And these may be more easily gotten than certain natural resources. Further, it may even be that South Dakota already has more of the vital resource than many would think.

Finally, South Dakota should find out more about the need for achievement. One obvious step, of course, is to read McClelland's book. Further, the question arises as to how the need for achievement is developed in people. Psychologists would probably say it develops in early childhood years. Research should be conducted along this line. Also, the question arises whether certain existing institutions help to develop the need for achievement in people. Examples here would be the Boy Scouts and elementary schools.

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<sup>14/</sup> McClelland, op. cit., p. 173.



Investments in Human Capital

David F. Pearson  
Assistant to the President

If it's true that one learns from experience, then I am qualified to be on this program because I have done some investing in human capital. I've invested in myself through education and we have joined together through the common bond of taxes for investment in our fellow men and we have invested well.

The matter of economic development and growth is a popular and intriguing subject. At times it's even more popular than basketball and, in fact, aside from the life of Elizabeth Taylor and the Beatles, there are few items that are receiving more public attention.

This meeting under the sponsorship of the Economics Department is a part of the restless stirring of man everywhere for a better life. These "Dick Tracy economists," armed with their calculators and computers, in their search for "indicators," "factors of production," or "rates of return" have brought under surveillance just about every activity of man. They have almost taken away our right of privacy. They scrutinize everything from the supply of silver dollars to the hemline of women's skirts as they try to reduce economic chaos to order and uncertainty to certainty in man's constant effort to determine the causes of more disposable income, more gross national product, less unemployment or whatever it is that reduces drudgery and enhances prosperity.

I don't know who the first economist was but I presume it was Adam, because it was he who first demonstrated the consequences of alternate decisions, and that is the function of an economist. At least we know that Adam made a choice and I suppose that his choice involved some aspect of economics and man's search for a better life. Then, his namesake, Adam Smith, came along and feeling some responsibility for the first Adam he tried to give some respectability to economists and economics by giving them the badge of their life's work in his book, "The Wealth of Nations."

Economics gets involved in public policy and policy gets involved in politics and economists are sometimes shot down like dogs, are spat upon, and are much maligned, depending upon which political party pursues which policy. They receive far too little credit for the contribution they make to the better life, and it is substantial.

Before we had economists we had just people, and these people took their environment and their economic lot pretty much for granted. If they were lucky, they had rich soil, fish in the stream, deer in the forest, and muscle on their back, and a one-room school house. They had the primitive elements of sustenance and they knew little about theoretical economics except that it seemed like a good idea to forgo some things today in order to produce more tomorrow. They had their primitive forms of investment. However, life was chiefly a matter of survival. They did little to control their economic lot except pray for rain and good hunting.



Today, economic problems and opportunities are in the headlines. Listen to some of them: "South Dakota Good Place for Skirmish in War on Poverty," "Midwest Governors to Seek Research Projects," "State's Economy Eyed, Suggestions Offered," "Education Recognized as Economic Key," "Russia Says Economy is Better than U.S.," "Area Economy Said Below Potential," "Taxes Hurt but Pay for Our Way of Life," "Higher Education Should Pay for Itself" (this man doesn't think it does).

The headlines indicate that while there is unparalleled prosperity there are economic problems and people are seeking information for rational decisions. We know we can't take the good life for granted. We now recognize the economy as a mechanism that can be better understood and steered; that we are not the victims we once were of unseen forces that made prosperity ebb and flow. The forces of economic growth and prosperity have been brought into the open by the economist where we can examine them and to a considerable extent direct them. It has often been said that the kind of world we live in is the deliberate creation of men. Deliberate action is becoming more important and chance less important. With the advancement of knowledge, the accumulation of historical data and its analysis by our economists, man does have greater control over his economic destiny.

What has the searching economist exposed about human resources in economic development? Let me digress here for a moment before giving the economist his just due and remind you that perceptive men since the beginning of organized society and the recorded word have stressed the importance of intelligent man to a happy and affluent society. We might almost say that we hold this truth to be self-evident that "human development is the essential ingredient of economic development, as well as cultural and social development."

A variety of "credits" have been given the educational establishment and the educated man. Men of history speak about the benefits from education in terms of morality, stability, security, prosperity, freedom, happiness, less suffering, character, strength, power. The South Dakota Constitution is a good place to start. It states that "The stability of a republican form of government depending on the morality and intelligence of the people, it shall be the duty of the legislature to establish and maintain a system of public schools equally open to all and to adopt all suitable means to secure to the people the advantages and opportunities of education."

John Adams said, "The whole people must take upon themselves the education of the whole people and must be willing to bear the expense of it." (He is in effect speaking for publicly supported education.)

Martin Luther, four centuries ago, made the statement that, "The prosperity of a country depends not on the abundance of its revenues, nor on the strength of its fortifications. It consists in the number of its cultivated citizens, in its men of education, enlightenment, and character. Here are to be found its true interest, its chief strength, its real power."

In 1957 the President's Committee on Education Beyond High School issued this statement, "Our colleges and universities are expected by the public to perform something close to a miracle in the next 10 to 15 years. The demand for this miracle comes not alone from the growth in population and the popularity of education. It comes, too, from the realization that only through adequate education can the United States remain the fabled land of democratic opportunity and achieve the level of civilization and economic strength that its resources and destiny promise."

Frank Abrams, a former chairman of the board of Standard Oil of N.J. said this, "The progress of the United States has been the progress of education in this country from the beginning. As we have raised the level of education - expanding the number of people who could go to school, increasing the number who could go beyond literacy into higher and higher education - we have raised the ability of millions of individuals to discover and develop their potentialities, to lead richer lives, and to handle their own affairs successfully. On the material side, education has increased our capacity as individuals to produce, and thus to earn. Through education men have increased their ability to cooperate with one another in great undertakings and to use the discoveries of the free, inquiring mind for the development of hundreds of thousands of goods and services which make life richer and safer. We have accomplished more because we have learned more."

In speaking of higher education, the president of Johns Hopkins University in 1876 made this analysis of its pervasive influences: "The opening of the University means a wish for less misery among the poor, less ignorance in the schools, less bigotry in the Temple, less suffering in the hospital, less fraud in business, less folly in politics; and among other things it means more wisdom in legislation, more intelligence, more happiness, more religion."

The essence of these statements has been well phrased by a musician Pablo Casals, the great cellist, when he said, "We have come back to the realization that the beginning and the end are man -- that it is man who is important, not the machine, and that it is man who accounts for growth, not just dollars and factories. Above all, that it is man who is the object of all our efforts."

The whole matter is brought into sharp focus by the distinguished philosopher, Dr. Trueblood. He said, "The purpose of the college (and he might have said education) is the creation of the future." That's all it is.

What can the economist add to these statements concerning educated man as a resource of society? He can reduce generality to something more exact and by so doing can help provide the basis for sound public policy. He can help reduce doubts and can reaffirm the proponents of investment in education. The drug store economists will recall that 25 years ago or less the factors of production were listed as land, labor, and capital and we learned it was the shuffling or adding of these factors that increased economic output. Labor was treated as a homogeneous group and capital was thought of in terms of machinery, steel mills, railroads, or any aggregation of goods used for producing other goods.

In recent years economists discovered that there is such a thing as "human capital" and which accounts for the substantial increase in production that could not be accounted for historically by measuring inputs of land, labor, and capital. They had overlooked or underestimated the improved skills and knowledge of the people that work with other forms of capital. In recent years the concept has become well established that the educated person is a better producer and also a better consumer. Both, of course, are vital to our economic vitality and growth.

The concept of education as an "investment" has come into being and it is a logical concept because when people do not spend for goods for consumption (food, clothing, cars) and use their resources for education to enable them to earn more in the future, they are making an investment for themselves and for society that has many similarities to an investment in other producer goods such as machinery. The distinction is more than academic, because it affects the public attitude toward education. During the past ten years many economists have devoted extensive research to the rate of return on investment in education and whether it makes sense to invest in people rather than in other forms of capital, for example. It is difficult to measure the return or benefit but there is reasonable uniformity in the conclusions.

The current estimated dollar returns to the individual are outlined in the Occupational Outlook Quarterly, U.S. Census Bureau, December, 1963:

<u>Years of School Completed</u>	<u>Lifetime Earnings Age 18-64</u>
Less than 8 years	\$143,000
8 years	184,000
1-3 years high school	212,000
4 years high school	247,000
1-3 years college	293,000
4 or more years college	417,000

The return to the individual is easiest to compute and it is estimated that over a period of a lifetime the average college graduate will earn about \$170,000 more than the high school graduate. The individual receives many other returns from intellectual activity, including the satisfaction of self-fulfillment, refreshment of the spirit and mind, social adjustment, and cultural growth.

Most of us are less aware of the returns to society from our investment in education. First let's take a look at the magnitude of the nation's educational establishment as documented by the U.S. Office of Education:

Number of Educational Institutions:	Elementary---	94,860
	Secondary----	30,000
	Colleges-----	2,100
Number of Students Enrolled in:	Elementary---	35,000,000
	Secondary----	12,100,000
	College-----	4,386,000
Total Students Enrolled-----		51,486,000
Total Number of Teachers:		2,062,180
Administrators and Supervisors:		150,170
Board Members:		183,700

In dollars, we invest about 5% of the gross national product, or about 25 billion each year in educational institutions, kindergarten through university, both public and private. Forty percent of the support is from state sources, 55% local, and 5% federal.

I might mention in passing that each year as a nation we also make the following expenditures:

For cigarettes and other tobacco	\$ 7,605,000,000
For gasoline and oil	11,877,000,000
For highways	9,995,000,000
Cosmetics and beauty care	5,790,000,000

We know of course that investment in education in South Dakota is substantial. For example, our annual per capita expenditure of state and local governments in elementary and secondary schools in \$77 and for higher education is about \$27 per year. What are the returns to society from this investment? Do we get our money's worth?

Professor Ted Schultz, a graduate of South Dakota State and professor of economics at the University of Chicago, has recently made an exhaustive study of the subject under the auspices of the Ford Foundation. He states that "the return from the additional schooling of the labor force would appear to account for about one-fifth of the rise in real national income in the United States between 1929-1957." When Schultz uses the term "additional schooling" he simply refers to the return from more people going to school longer.

However, in his book entitled, The Economic Value of Education, 1963, he emphasizes that the full story of the return on the investment is not told unless we include the returns from all of what Professor Schultz calls the "major functions of the educational establishment" including the usual classroom function.

Schultz lists "research" or the advancement of knowledge as one of the other functions and he attributes about 18% of the growth rate of our economy between 1929 and 1957 to this function of education. (Adding this to the return from "more schooling" makes a total of about 38% of the growth rate from 1929 to 1957 that he would attribute to education.) He suggests that the payoff from agricultural research is at the rate of at least 35% a year. An extreme case is the return from the research in hybrid corn as of 1955 there was a return to the economy of about 700% per year.

If this statistical evidence of the return is inadequate, one authority estimates that the additional payments by a college graduate of state taxes alone will be about \$6,000, which is substantially more than the average state appropriation of tax funds per student toward the support of four years of education in public four-year colleges. (Change and Choice in Higher Education, 1962, M.M. Chambers, U. of Michigan.)

Schultz also mentions the function of discovering and cultivating potential talent and which, contrary to some opinion, does not flourish in spite of its environment. Professor John Galbraith, the Harvard economist, made the statement that "most technological advance is now the result, not of the accident of inspiration of genius, but of highly purposeful effort. Once we had to wait for the Edisons and Wrights. Now, through education we get something approaching the same results from much more common clay." Alfred Marshall, points out the economic value of one man's intellectual production in his statement that "the economic value of one great industrial genius is sufficient to cover the educational expenses of a whole town; one new idea such as Bessemer's invention adds as much to England's productive power as the labor of 100,000 men."

He lists a third function as that of increasing the capability of people to adjust to changes in job opportunities. Today's jobs won't necessarily be tomorrow's jobs and the large movement of people out of agriculture is a classic example. This is of critical importance to South Dakota. People in any industry must have the education and training that gives them the flexibility and desire to make necessary adjustments. If our economy is to grow, new jobs must be found for people whose jobs are replaced by new developments. In South Dakota as well as the nation, the job market will always be in a state of flux.

Schultz also refers to the function of recruiting and instructing students for teaching because we can't have schooling without teachers. The demand for instructional staff at all levels is increasing faster than we seem able to keep pace. The competition for competent teachers is acute. Certainly this is a vital function in South Dakota.

Schultz lists the final function of the educational establishment as that of meeting the prospective need of industry for people with high development of skills if we are to sustain our rate of economic growth.

Economists are the first to admit that the measurement of return from investment in man is not yet an exact science and it may never be. However, the conclusions are sufficiently accurate and meaningful as to have some effect on public policy both in this country and abroad.

It is now a matter of general acceptance among those who have studied the subject that, from the public point of view, education is an investment rather than an expense. Galbraith says, "Like bread, it's something we use and consume, but like a dam or canal, education is something to produce more in the future." When we think of education as an item of expense, it becomes something on which we should save. But when we think of education as an investment, it becomes something we should emphasize. We seek to expand investment.

Someone has said recently, "Once again we are emerging, not without struggle, from the antediluvian age when education was considered a private benefit to be bought and sold on the market, and none of the public's business."

In most quarters we seem to again be winning the battle which many thought was won 100 years ago or more, when Congress passed such legislation as the Land-Grant or Morrill Act, which was a commitment to the legitimate public interest in and need for public support of higher education. If there are public benefits that accrue, then the public interest must be served by public policy and not left to chance.

While I am willing to accept the findings of the economist, there is other evidence that some may find equally as convincing.

Galbraith, in his book, Economic Development in Perspective, makes the statement that "Nowhere in the world is there an illiterate peasantry that is progressive. Nowhere is there a literate peasantry that is not. Most of us would agree on the importance of scientists and engineers for economic development, but the productivity of doctors and public health specialists is also very high." They suppress disease which increases energy and output. "There are surprising returns from exotic forms of knowledge. The linguist maintains the avenues to the technology of other cultures. Literacy leads on to a demand for writers who can supply the market and the accomplished writer adds to gross national product in precisely the same way as a successful farmer."

On the international scene, witness the tremendous emphasis being placed on education by Russia, Cuba, China and witness the need for it in the underdeveloped countries and the increased emphasis on education in the more highly developed countries.

The value of trained people and of educational institutions can be told in other ways that have deep meaning. A news article in the Sioux Falls Argus Leader a couple of years ago quoted East Germany's Communist Chief, Walter Ulbricht. His comments revealed the real reason for the Berlin wall. Ulbricht disclosed the tremendous blow dealt his regime by the flight of specialists and intellectuals to the West. He said, "The training alone of the working force which was then recruited by West German monopolists, costs us above 30 billion marks: this is nearly 40% of our national income in 1961."

The January 20, 1962, issue of "Saturday Review" carried an article entitled "A Kingdom for Education," written in Addis Ababa, Ethiopia. Here is what the article said, "To an American, education has long since ceased being a phenomenon. The wonder of it has been completely metabolized, along with home milk deliveries and



running water. To most Africans, however, education is the most revolutionary part of a revolutionary age. It represents a flying leap from the tenth to the twentieth century. It is a road map out of feudalism. It is the tangible proof of liberation and the first fruit of freedom. It is a certificate of self respect. It is better crops and enough food. It is a whole host of great expectations that come with self government. It is what people think about and talk about."

What implications does all this have in terms of policy for South Dakota, aside from the obvious fact that we are affected by national policy and are the beneficiaries of educational emphasis throughout the country just as the rest of the nation is affected by our policy. At this point the economist would again explain his position. He would say that resources are seldom adequate to do all the things we would like and choices must be made among alternative uses. He would emphasize that the basic function of the economist is to outline the alternatives and the probable consequences of the choices.

I am not an economist and therefore I will exercise the privilege of a rank and file layman and make some observations concerning some compelling forces that will occur and which should influence our policy decisions toward education now!

1. The influx of war babies into the labor force of the nation is just about upon us. Twenty-six million new young workers will enter the labor force in the 1960's. It is estimated that 7 1/2 million will be entering the labor force without a high school education. South Dakota will share in this increase in both categories. As an example, our high school enrollment increased from 33,115 in 1952 to 49,332 in 1963.

It is estimated that South Dakota has a high school dropout rate of about 25%. The employment opportunities will belong to the trained. Most of the untrained will be spending their lives looking for a job that doesn't exist. At the present there are 700,000 sixteen to twenty-one year old youths in the United States who are out of school and out of work. In the United States about three-fourths of the heads of families with incomes under \$3000 a year have not completed high school.

2. At the same time in the United States and South Dakota, there is a tremendous increase in numbers of those who are securing additional training beyond high school. It is heartening to note that there has been a steady increase in the percent of high school seniors who go on to college. It has increased from 31.8% in 1952 to 46% in 1962 and the percent will very likely go much higher. The war babies are now in high school and will be trying to get into the colleges beginning with the fall of 1965 and thereafter. College enrollment in South Dakota will likely jump from 15,700 in 1963 to nearly 25,000 in 1972.

3. Economic necessity, the increase in financial means, and more leisure time, will result in more people, young and old, seeking more education. All of these forces are at work in South Dakota.

4. South Dakota has a particularly acute problem because of declining opportunity for employment on the farm. It is a difficult problem but an effort should be made to provide some training that will assist these people in securing other employment.

5. Speaking about the nation as a whole, most students of this subject state that we cannot afford another generation as ignorant as this one. By this they mean that we must achieve an even higher degree of excellence in our educational program than we have in the past. This same high standard of excellence must certainly be achieved for students at South Dakota institutions and for all South Dakotans. We cannot afford to do less.

These facts tell us that South Dakota must place a high priority on education just to hold our own with past performance, and past standards of excellence will not be adequate for the future.

Now I will rush in where Angels may fear to tread and express some personal opinions about education and its priority and whether we should do more than just try to hold our own.

There must be some validity in an increased investment in education because recently there have been some strong commitments in the area of public policy toward education.

The January 24, 1964, "Time" magazine contained an article which stated that, North Carolina is showing how education can be used to lift a whole state's economy. Ranking 42nd among the states in per capita income (South Dakota ranks 32nd), North Carolina aims to improve its schools by means of a belt tightening 3% sales tax on food. The tax which enabled the assembly to add \$100 million to school funds over 2 years, proved so beneficial that the 1963 assembly added \$69 million more, bringing annual state school spending to \$268 million. Apparently, they believe the statement made by Justice Holmes. "I like taxes" the justice said, "with them a man buys civilization."

It is a fascinating article describing what has been done by this program which was an outgrowth of the present governor running on a platform of "quality education." You may find this portion of the article of interest, "Industrial investments of almost \$600 million came in during Sandord's first two years, and he credits the lure of better schools. Says the Ford Foundation's admiring President Heald: 'North Carolina leadership may well set a pace for other states.' " I would like to believe that.

This year, in the face of the stumbling blocks of the racial problem and aid to private schools, Congress passed academic facilities legislation and made other rather strong policy decisions in support of the nation's educational effort. There are those who point out that our gross national product is about \$600 billion a year and that if we credit the effects of education to only 10% of this (and studies show much more than this), it would not seem out of line to invest up to \$60 billion annually in education instead of the current 5%.



In spite of all the proof that has been marshalled and the profitable examples of others, I'm convinced that many people in South Dakota view education and especially higher education as an expense rather than as an investment opportunity. We are all seeking ways of achieving a quality program as cheaply as possible, but consistent with a program of excellence.

Too few of our people want to be proud of our educational institutions and are willing to do something about it because they do not understand their importance to themselves personally or to the future of South Dakota. To marshall the support that is needed for education in South Dakota, there must first be a study by many people of its importance and the role it might play and the impact it could have on the economy of the state. Too frequently we speak of education in terms of its "problems" instead of thinking of it in terms of its exciting "opportunities." This is unfortunate because it affects our attitude in formulating a policy for education. Our people must become aware that education is something more than a complex array of problems and that in fact it offers our best hope for a better life for all of society. The opportunities might become more clear if we pondered the state of affairs that would exist if we did not have our educational institutions. Consider the benefits we now have that would be lost and the problems that would remain unsolved and without human resources to achieve their solution.

After a study of the importance of education, including our educational establishment, I perceive that our state might do the following:

1. We should be willing to invest substantially more in the staffs of our institutions in insure that we secure and keep people with leadership qualities, problem solvers, people who are inventive and creative and who can enrich our economy with their intellectual production. I'm convinced that this might be the shortest route to home grown industries.
2. We should be programming now the needed facilities for our institutions of higher learning which, without being wasteful, should be of a nature that provides good teaching and research facilities, and which generate pride among our citizenry and which reflect to our neighbors the importance which we place in our educational establishment. We are already late in scheduling the facilities that will be needed tomorrow and some of which are needed today.
3. Take full advantage of every opportunity to develop our vocational training and trades program for the high school dropouts and for those who cannot or should not pursue a college program.
4. Pursue with energy the advice by the Upper Midwest Research and Development Council and establish technical institutes at existing institutions for the purpose of meeting the demand for highly trained technicians. You who have read this report will remember that we have none of these in the Upper Midwest and that a supply of such labor is an important factor in attracting industry.

5. I think we can marshall more fully the resources of our institutions of higher learning in making a greater contribution to the economic development of the state. We achieve this very well, I believe, for our agricultural economy but we have not achieved it as well for industrial development.

6. We should insure that our colleges are responsive to development requirements in terms of curricula (the training of labor force), research to assist existing industries and to attract others, and through the offering of consulting service in the solution of industry problems. This should not be at the expense of existing classroom programs.

7. There should be a closer communion between our educational institutions and state IDEA. We should visit you and you should visit us regularly. We have functions which complement each other.

8. We should achieve a high quality program at all levels so that our facilities and program will indeed be attractive to industry and their workers. We work at length and in many ways to build an image of South Dakota that is attractive to others, but the most important image is probably what we achieve through our educational establishment. Above all, it demonstrates our sense of values.

9. Certainly we must move with dispatch to upgrade poor quality education at every level.

10. We should move ahead now in support of an educational TV network. It can achieve benefits for young and old.

I'm not suggesting for a moment that education is a panacea for all our economic ills nor do I suggest that our present effort is not substantial, but I do believe that South Dakota can do more than it now is in profitably investing in human resources. I would remind you that these human resources we are talking about are our children, our neighbors, our friends, ourselves, and the problem of education and its opportunities cannot be put off until tomorrow.

I saw this statement the other day and I think it summarizes what I have said, "Evidence over the years has made one fact clear: you pay for a proper system of education one way or another. Either you pay for it positively by considering funds for this purpose as an investment in the future, or you fail to provide enough funds and you pay negatively in lost payrolls, lost taxes, and worst of all, lost opportunity for our young citizens."

Per Capita General Expenditure of State and Local Governments, by  
Function, 10 Great Plains States and United States, 1960

State	Total	Education				Highway	Public welfare	Health and hospitals
		Total	Institutions of higher education	Local schools	All other			
	<u>Dol.</u>	<u>Dol.</u>	<u>Dol.</u>	<u>Dol.</u>	<u>Dol.</u>	<u>Dol.</u>	<u>Dol.</u>	<u>Dol.</u>
Colorado	344	141	32	107	3	56	49	21
Kansas	291	114	26	87	1	73	24	18
Montana	334	117	27	87	2	89	22	19
Nebraska	269	102	20	80	2	72	18	19
New Mexico	309	139	30	105	5	59	27	15
North Dakota	369	131	32	97	3	108	23	11
Oklahoma	282	105	21	82	2	49	55	14
South Dakota	301	107	27	77	2	100	22	11
Texas	246	93	18	74	1	58	19	14
Wyoming	454	172	35	134	3	140	16	30
10-State average	320	122	27	93	2	80	28	17

Source: Revenues and Expenditures of State and Local Governments in The Great Plains, Agricultural Economics Report No. 22.

## Potentials for Increasing Income From Crops

Dr. Wolfgang M. Schultz  
Assistant Professor

Plant production is the very foundation of agriculture. The importance of it can be measured best not in terms of the crops sold, but in terms of the crops produced, because a large share of plant production is fed to livestock and poultry to make it salable.

The value of crops produced in South Dakota amounts to \$335 million (all statistics cited refer to the period 1958-62), about \$20 per acre of cropland. To this let us add \$65 million, the approximate rental value of 25 million acres of native grass-land, for a total of \$400 million. Only about \$160 million is sold outright, seed takes \$13 million. The remaining \$225 million worth of crops and forage help to produce \$483 million of animals and animal products.

Sales plus a few other items such as subsidy payments, value of home consumption, rent, and inventory increases add up to gross income from farming of \$720 million annually. (Farming is South Dakota's largest industry.) After expenses, \$260 million are left as net farm income.

For the people of South Dakota as a whole net farm income alone is not the only benefit. Most of the gross income is spent in the state to cover farm and living expense. Let us follow the path of a dollar spent for a can of weed spray. The average farm supply store has a gross margin of 18%. <sup>1/</sup> Of every dollar spent for farm supplies 18 cents go to pay salaries, interest, rent, and owner's income. The process of income creation is repeated with the 82 cents passed on to the wholesaler. Locally the process continues with 18 cents which will be spent again, giving rise to another gross margin (someone else's net income) and so forth. Since the 2,4-D, like so many other supplies used in farming, is manufactured in some other state, the farm dollar spent first in South Dakota helps to boost income elsewhere, too. But one may safely assume that an extra dollar spent by the farmer -- or any other person spending more than he did before -- is that much personal income earned by people in this state. Thus, as seen from Pierre, any new farm spending will be welcomed.

Here we must be concerned with the question of which expenditures create the most net income for the farmer and rancher himself. The primary guide for additional farm expenditures is the profitability of the additional investment in the farm business.

### Two Approaches to Raising Income

Once it is agreed that an increase in income is desirable from the viewpoint of the economy, we can start looking for ways of increasing income, keeping in mind

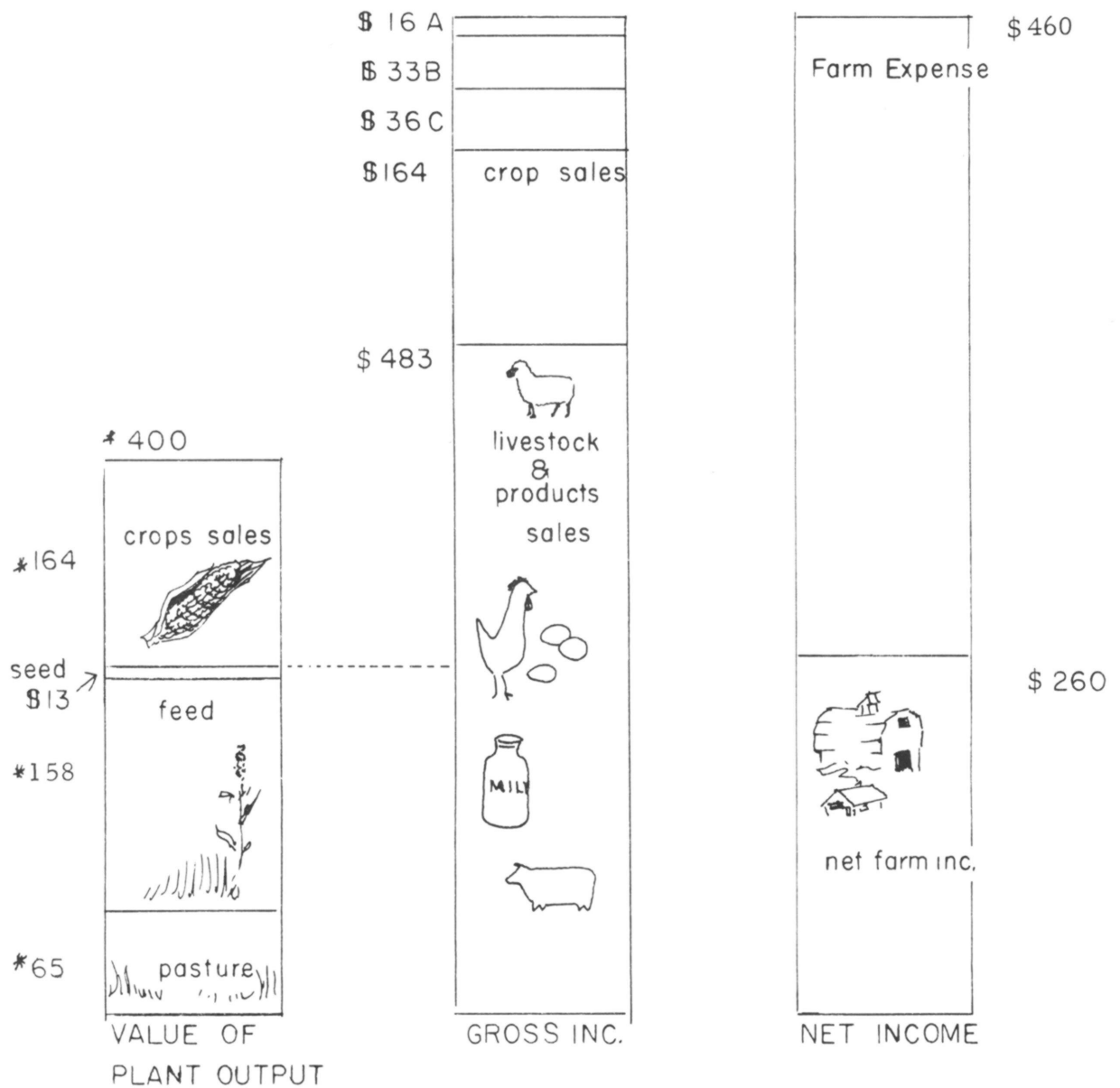
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<sup>1/</sup> Dunn & Bradstreet Inc., 99 Church St., New York 10008, Operating Ratios in Selected Retail Trade Branches, 1959.

FIGURE 1

# SOUTH DAKOTA ANNUAL FARM INCOME, 1958-1962

720 million =



that farmers and ranchers are searching for ways to increase their net incomes. The higher the profit expected, the greater the chance that the practice will be adopted. There are two principal ways of raising income. We can increase volume or we can raise the price.

First let us assume steady prices and look for ways of increasing volume. Steady prices are possible as long as we do not rock the boat and expand production beyond the annual demand increases. Thanks mainly to the growth of the nation's population - about 1.6% per year <sup>2/</sup> and world population - about 2% <sup>3/</sup> - we can expect demand to increase. If per capita income continues to grow, too, we may expect demand to increase by 25% over the next 10 years.

With these assumptions and with nothing more elaborate than our presently known technologies, we should be able to increase the value of crop production in South Dakota by \$100 million annually within the next 10 years. Five distinct areas of attack are open to us:

- (1) Commercial fertilizer
- (2) Better crop and forage varieties
- (3) Improved management and cultural practices
- (4) Irrigation
- (5) Specialty crops

Fertilizer. A survey of 291 field experiments and demonstrations conducted during the last 20 years by the Agronomy Department indicates there are numerous situations where the use of fertilizer will increase not only yields, but will effectively increase net income, too. <sup>4/</sup> Farmers are recognizing this. Sales of fertilizer rose from 6,800 tons in 1950 to 67,000 tons in 1962. <sup>4a/</sup> Still this is not much if compared to states bordering South Dakota to the north, east, and south.

We must keep in mind, however, that we can boast fewer occasions than farmers in Indiana or Ohio to treble our investment in fertilizer in a single year. In fact there are not many measured fertilizer tests which demonstrate a doubling of the initial fertilizer investment. But then few would doubt that even a 20 to 40% average return on investment, if maintained over the years, is one of the best opportunities to spend money on a farm in South Dakota. With some hedging justified by past experience <sup>5/</sup>

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<sup>2/</sup> U.S. Bureau of the Census, as reported in Business Week, March, 1964.

<sup>3/</sup> U.S.D.A. Economic Research Service - Foreign Agricultural Service, The 1964 World Agricultural Situation; Foreign Agricultural Economic Report 14, Washington 1964, p. 3.

<sup>4/</sup> W.M. Schultz, "The Potential Demand For Fertilizer in South Dakota," forthcoming.

<sup>4a/</sup> South Dakota Crop and Livestock Reporting Service, "South Dakota Agriculture 1962," p. 26.

<sup>5/</sup> D. Gale Johnson and Robert L. Gustavson, Grain Yields and the American Food Supply, Chicago 1962, p. 81: "Our estimate of the actual effect of fertilizer is, very roughly, about half as large as the average of estimates from experimental results."

we may set the potential annual increase in crop production through fertilizer at \$40 million, at a cost of \$30 million (fertilizer purchase plus application).

New Varieties. New crop varieties have helped maintain and increase crop yields in the past. The gain in wheat yields in the Western States due to new varieties comes to about 1 bushel per acre every 10 years. <sup>6/</sup> We may expect an additional bushel gain during the next 10 years, because wheat breeding continues and important breaks in breeding techniques have recently been discovered. Breeding efforts are also made in the area of hybrid corn, sorghum, and virtually all other grains, forages and cultivated crops. Taken together, new varieties may boost the volume of production by 5% during the next 10 years. The cost of the breeding work itself is borne by private breeders, seed companies, and publicly supported experiment stations. However, we do expect that farmers will spend an extra \$5 million for more frequent seed changes and the use of certified and commercial hybrid seed.

Improved Management and Cultural Practices. Since the first sod was turned in South Dakota, the management of the soil has seen vast changes. Many practices are now part and parcel of every farmer's basic bag of tools that were not dreamed of at the turn of the century. Soil mulching has spread like wildfire in the wheat country, minimum tillage is now a hotly discussed subject in corn country. We continue to learn how to fight plant pests and weeds, advances are made in the art of determining the proper seeding rates and time of planting, or planting and fertilizer practices based on measurement of soil moisture and long-term weather forecasts. Not all farmers by far make use of what is known today. There is much room to improve the art of making the soil produce more for us and conserving it at the same time. Most of the 25 million acres of native pasture could be improved through more scientific range management.

It is difficult to pin a dollar value on the growth potential, because it is hard to attribute the results of good management to specific causes. Five percent increase through better management may be a conservative estimate. The greatest effect on net income could be expected here. Many good practices could be implemented without any additional expenditures. Total new costs are estimated at \$10 million in this category.

As a matter of record farmers have shifted production to those crops which give the greatest net return. Undoubtedly we will see shifts in the future, notable towards more corn, forage, and specialty crops and away from wheat and oats. <sup>7/</sup>

Irrigation. If the Oahe project is in full swing 10 years from now (an unlikely event) the cumulative effect of newly irrigating 500,000 acres would be \$14 million

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<sup>6/</sup> Ibidem, p. 85, 139 (footnote 8). S. C. Salmon, Dr. R. Mathews and R. W. Leukel, "A Half Century of Wheat Improvement in the United States", *Advances in Agronomy*, vol. 5, p. 3-151 (1953).

<sup>7/</sup> Rex D. Helfinstine, *Trends in Farm Production* (Economics Department S.D.S.C., 1963).



gross, the result of raising the value of production from the present \$22.50 <sup>8/</sup> to \$50 per acre. Eventually we may expect at least as much land under privately initiated irrigation as in organized irrigation districts. <sup>9/</sup> Yet at present irrigation development shows no sign of continuing the brisk pace it has shown during the fifties. <sup>10/</sup> Possibly large-scale irrigation development will have to wait for another generation to take over. In any event, the costs of irrigation are considerable.

Specialty Crops. Why shouldn't we have a second sugarbeet processing plant in South Dakota by 1970? The impact would be tremendous locally, and would have significant effect on the income ledger of the state as a whole. At present yields and prices, an acre of sugarbeets yields \$180, leaving a net farm income of \$30, several times more than the income which could be earned on the same land with conventional crops under dryland conditions. On 25,000 acres of sugarbeets a crop valued at \$3.3 million could be raised annually. Other specialty crops - sweet corn and other truck crops adapted to our climate, safflower, mustard and other new crops still in the trial stages - may raise the total gain from specialty crops to \$6 million.

#### Total Increase in Volume

Table I summarizes the potential increases. These increases include about 50 million bushels of feed grains and substantial quantities of forage. We cannot expect to sell all of the hoped-for production to farmers in other states or to export them abroad. We are now substantial exporters of feed grains <sup>11/</sup> and our feed grain price is among the lowest in the nation. <sup>12/</sup> We must try to feed a larger share of our crops at home if we want to uphold the feed grain price and improve our farm income position. This calls for an assessment of the livestock business and the marketing channels that move most of our production to the population centers and ports of the Great Lakes and the Coastal states and ports. <sup>13/</sup>

<sup>8/</sup> Average of Brown, Spink, and Sully counties, 1958-62. Estimates much from Crop Reporting Service data.

<sup>9/</sup> C. F. Johnson and Gustavson, p. 122... "Most irrigated land - somewhat over 75 percent - has been developed by private capital."

<sup>10/</sup> W. M. Schultz, "South Dakota Irrigation", South Dakota Farm and Home Research vol. 13, no. 3, p. 6 (1962).

	<u>1000 Bu. Corn Equivalent</u>
<sup>11/</sup> Feed grain production, average 1958-62	164,750
Feed grain production, 1961	155,800
Estimated sales of feed grains, 1961	66,895
Estimated out-of-state sales, 1961	44,760
Feed grains used in South Dakota, 1961	111,045
Share of home use, relative to 58-62 average	67.5%

This estimate is based on unpublished data from a survey of grain elevators covering the crop year 1961, and official crop estimates of the S. D. Crop and Livestock Reporting Service.

<sup>12/</sup> See the paper by Dirks, this publication.

<sup>13/</sup> See the following articles by Dirks and Erickson.



Table I.

	Addition to	
	Crop Value	Costs
	\$ 40 Million	\$ 30 Million
Fertilizer	20	5
Better Varieties	20	10
Improved Practices	14	10
Irrigation	6	5
Specialty Crops		
Value of Additional Crop Production		
Gross Income (+ 25%)	\$ 100 Million	\$ 60 Million
Net Additional Income (+23%)	\$ 40	\$ 20

The foregoing estimates may be considered unduly optimistic by some, if they are compared with the trend of acreages and crop yields since the turn of the century (figures II and III). Dr. Helfinstine's estimates for the period 1975-80 call for a continuation of the trend that has endured roughly since the 1940's. <sup>14/</sup> It is of course always possible that a long spell of poor weather would throw us back to the level of the thirties.

These are admittedly fairly optimistic assumptions. But even with these assumptions--constant prices, a 25% increase in the volume of crop and pasturage production--the expected rise in net farm income will hardly be more than \$800-1000 per (commercial) farm. This is scarcely enough to keep up with the pace at which nonfarm incomes seem to be rising. We must ask then, if we aren't overlooking something essential by concentrating our research and extension efforts in the direction of larger volume only.

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<sup>14/</sup> Helfinstine, Trends ...

# SOUTH DAKOTA

## Mill. LAND IN FARMS AND ACREAGE HARVESTED

acres

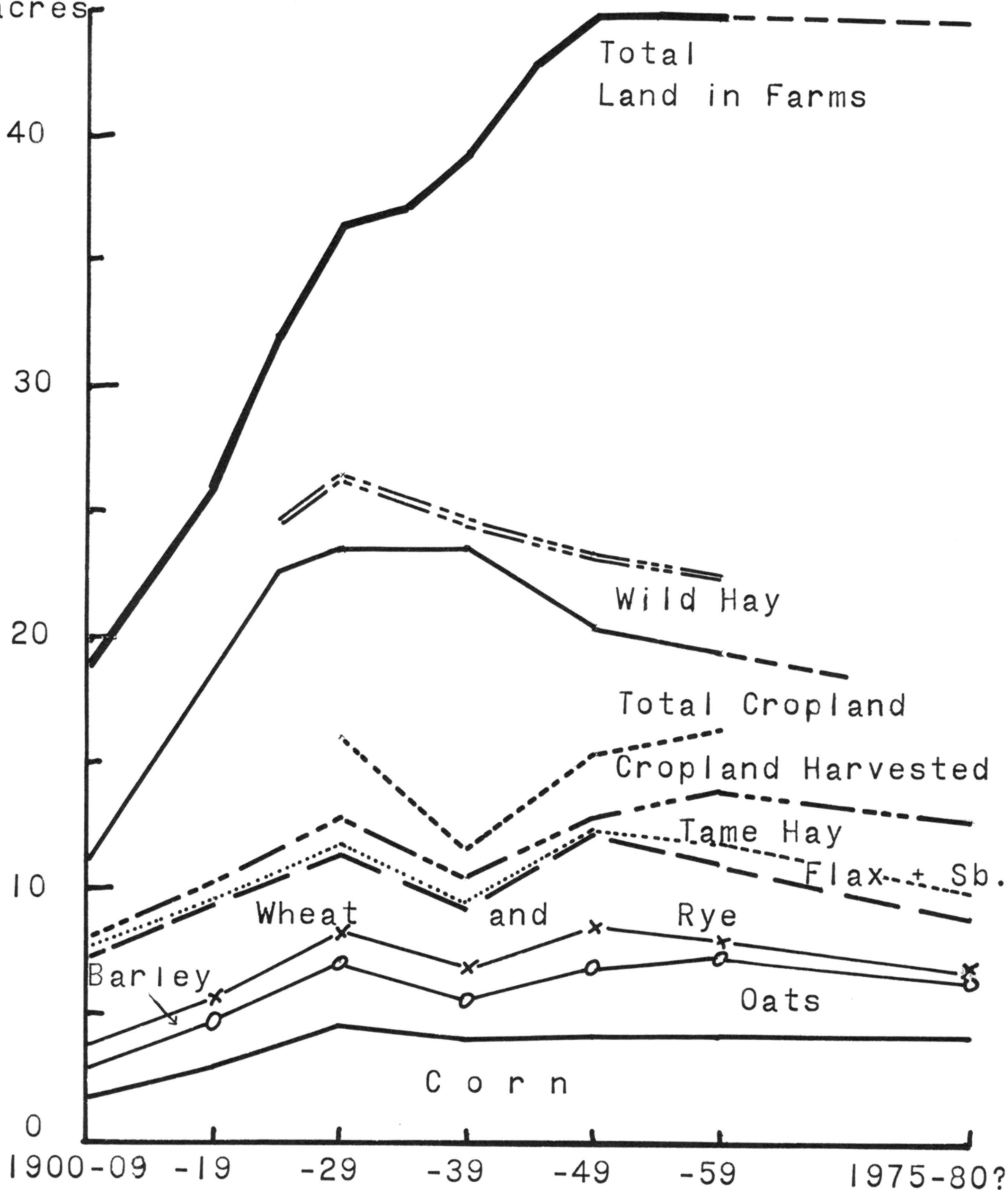


FIGURE II

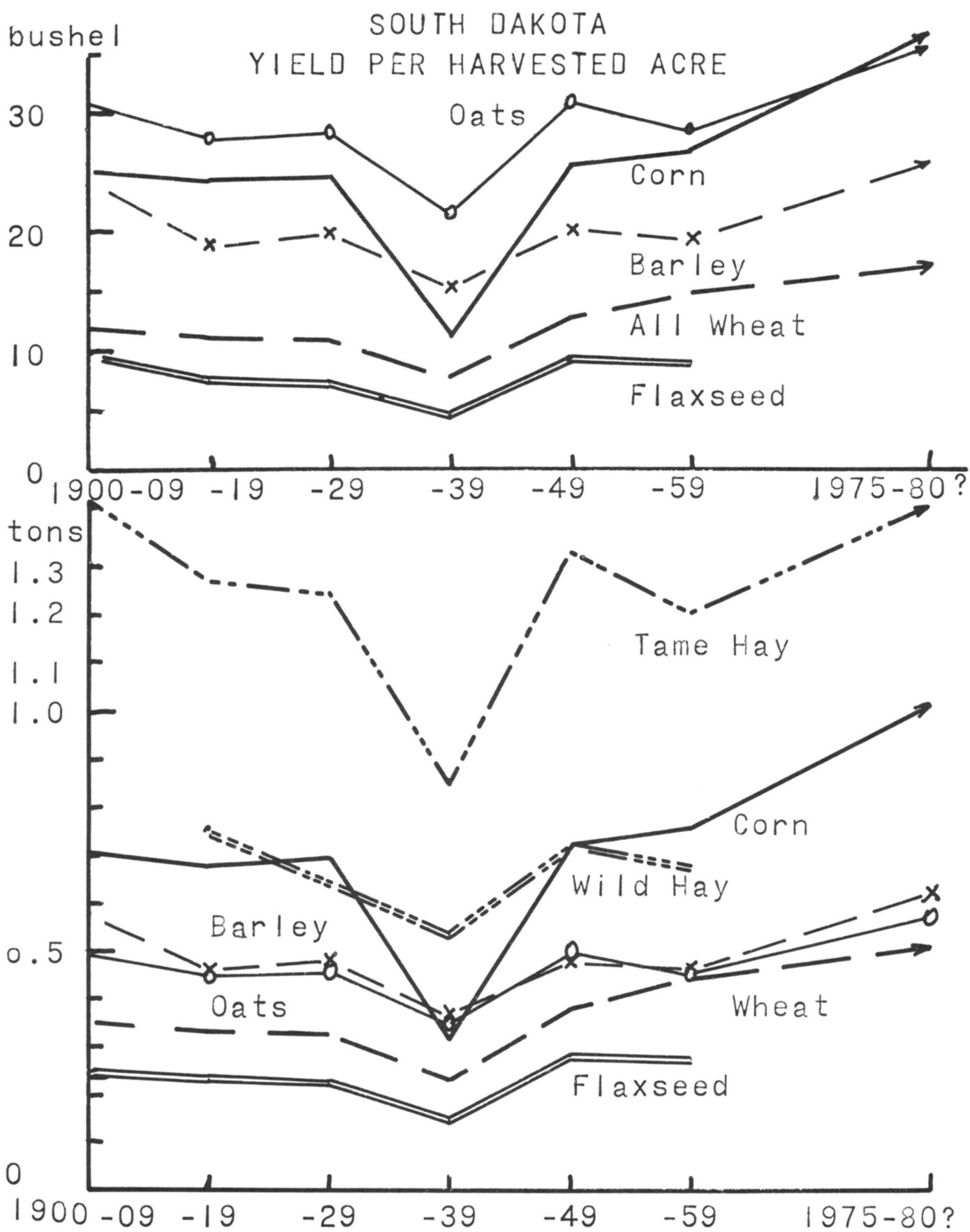


FIGURE III

## Potentials for Increasing Income From Livestock

Dr. Harlan Dirks  
Assistant Professor

Income from the sale of livestock and livestock products averaged \$483 million over the past 5 years in South Dakota. Our livestock industry has grown to be "big business" and there is still ample opportunity for further growth. Assuming no major changes in farm policy, let's take a look at what could be added to the state's farm income from an expanded livestock economy over the next 10 years. This phase does not take into account the contribution that expanded livestock production would make to related industries, which in itself would be an important contribution to the long-run economic growth of the state.

Although current low prices, high inventories, and imports make it difficult to get enthusiastic about expanding livestock production, the future appears promising. Population growth alone will be a big factor in the future demand for livestock products. Disposable income per person is expected to rise 30% over the next 10 years. Since meat has a relatively higher income elasticity than most foods, expenditures can be expected to rise. Per capita meat consumption increased nearly 20 pounds in the preceding 10 years, and is expected to continue to increase, but at a somewhat slower rate.

A good share of the increase in red meat consumption will come from higher levels of per capita beef consumption. Strong consumer preference reflects an expanding market for the beef industry. Recent projections indicate that beef production will have to be stepped up from 30 to 35% to meet the demand 10 years from now.

Per capita pork consumption, on the other hand, may drop slightly in the years ahead. Quality changes and new merchandising techniques could alter this expected downward trend; however, population growth will more than offset any loss that might occur in per capita consumption. The total demand for pork is expected to increase 15 to 20% in the next 10 years.

Lamb and mutton consumption has changed very little over the past 15 years. Annual consumption has remained between 4 and 5 pounds per person. Then too, synthetic fibers have been a strong competitor to wool. However, if consumption holds at the present levels, a 15 to 20% increase in sheep production will be needed over the next 10 years. Trends in per capita meat consumption are shown in Figure I.

Long-run demand clearly indicates the need for expansion in livestock production. Whether South Dakota producers share in this expansion will depend on how well they can compete with other regions. Areas of production can and do shift where states do not develop their resources or where producers fail to exploit new technology that show promise reducing costs and increasing efficiency. However, on the basis of past performance, it would appear that South Dakota can be a tough competitor.

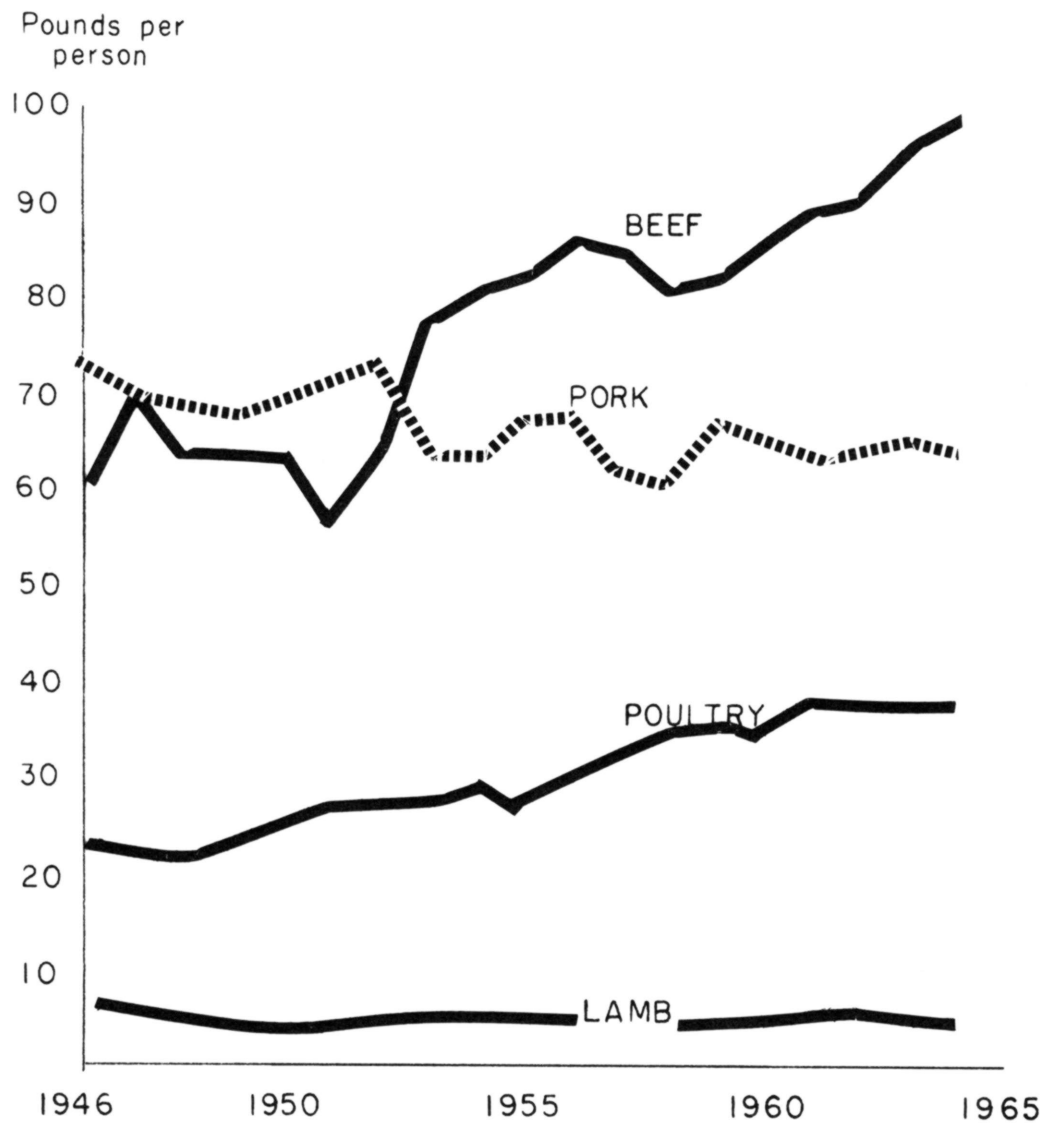


Figure 1

Per capita consumption of beef, pork, poultry  
and lamb, 1946-1965

## Sources of Increased Livestock Production

Increases in the volume of livestock output in South Dakota can result from three basic sources - (1) increased and more stable roughage and feed grain production, (2) greater utilization of available feed supplies, and (3) improved management and greater efficiency in livestock production.

The most important input for livestock production is feed. South Dakota has next to the lowest feed costs of any state in the United States for the average 1957-61 crop year prices received per 100 pounds corn equivalent (\$1.78). An abundant supply of low cost feed provides the foundation for growth in livestock production in South Dakota. Lowest feed costs are in the West North Central Region of the United States. It is in this region that the major increases in livestock production are expected to take place.

## Roughage-Consuming Animals

Is there any possibility of increasing the production of roughage-consuming animals in South Dakota? The answer appears to be yes. Studies show that with improved management and greater intensification, the carrying capacity of South Dakota pastures and ranges could be stepped up materially. The potential for increasing efficiency, in terms of production per animal unit and feed conversion, is also substantial. At the same time, more cropland acres are likely to be converted to forage production. It is estimated that the combination of these factors would permit at least a 30% increase in roughage-consuming animals possible over the next 10 years.

## Cow and Calf Operations

Future increases in the demand for beef can be met only if the supply of feeder cattle is expanded. This will call for an increase in number of cows in beef breeding herds. The question is where will this increase come from? Can South Dakota expand its cow and calf operations?

Feeder cattle production is usually thought to be tied to the range areas. However, at least 60% of the beef cows in South Dakota are now located east of the Missouri River. Cow and calf operations are likely to become even more important east of the river in the future, especially on farms where erosion problems exist or where farmers are shifting from dairy to beef production.

Beef cow numbers have been increasing in the Corn Belt primarily because new forage varieties, fertilizers and improved cultural practices have enhanced the competitive position of forage crops. At the same time, many farmers are finding that a cow and calf operation can be set up to be complementary to crop production. Then too, cattle feeders may find it even more profitable to produce their own calves in the future, particularly if feeder cattle prices continue to increase relative to fed cattle. A conservative estimate would be that feeder cattle production could be stepped up 30% over the next 10 years in South Dakota.

## Sheep Production

Another enterprise primarily tied to grass and forage production in South Dakota is sheep. The number of breeding ewes on farms dropped sharply following World War II, but have increased rapidly since 1950. Many an east river farm has added a flock of sheep as a supplementary enterprise. However, total production is still far from the peak production reached during the early 1940's.

Cash receipts from the sale of sheep and lambs have been increasing in recent years, but the relative importance of sheep to the state's agricultural income has been declining. Sheep, lamb, and wool sales accounted for 6% of the state's total farm income from 1940 to 1944. This dropped to 3.4% in 1961. But, because of the low capital requirements, rapid turnover on investment, and their adaptability to both range and farming conditions, sheep offer an excellent income opportunity to many farmers and ranchers in South Dakota. A 30% increase in sheep and lamb production appears possible in the next 10 years.

## Grain-Consuming Animals

The greatest potential for increased income from livestock is probably from expanded feeding. However, past studies show that livestock feeding has not expanded as rapidly as feed grain supplies would have permitted. It is true that year-to-year variability in feed grain production has been a factor in establishing feeding operations in many parts of South Dakota, but selling both feeder stock and feed grains outside the state has reduced farm income. Budgets show that one dollar's worth of feed grain is worth nearly two dollars when marketed as livestock. A summary of feed grain production and utilization for the period 1958 to 1962 is shown in Table 1. Note that less than 2/3 of the total feed grain production is used in the state.

Assuming feed grain production can be stepped up 1.8 million tons and out-of-state sales held near current levels over the next 10 years, about 4.7 million tons of feed grain would be available for feeding. This would be nearly 60% more than was fed in the 1958-62 period. At the same time, improved production techniques and increased irrigation will help stabilize feed supplies. However, it is unlikely that this increase would permit a proportional increase in livestock feeding, because as more livestock are fed there may be a tendency to substitute higher levels of feed grain for roughage.

## Cattle Feeding

Cattle feeding has been increasing in South Dakota but is still far from its full potential. Between 1958 and 1962 about 420,000 cattle were fed annually on some 12,000 farms in the state. Although cattle feeding has increased 40% in the last 10 years, about 500,000 feeder cattle are still shipped out of the state each year. More than enough feed grain to finish these cattle is also shipped out of the state.

National trends indicate that more cattle will be marketed as grain fed cattle in the future. A sizeable portion of the total increase in beef supplies could come from additional feeding. In 1930 only 30% of the cattle in the U.S. were marketed as fed cattle. This increased to 61% in 1962. The trend is likely to continue because grain fed cattle produce the kind of a carcass desired by chain stores and consumers.



Table 1. Livestock - Feed Grain Relationships  
for South Dakota, 1958 - 1962 <sup>1/</sup>

Average Annual Feed Grain Consumption 1958 - 62

Kind of Livestock	Average Number of Livestock Fed (Thousand Head)	Feed Grain Consumed Annually (Thousand Tons)
BEEF CATTLE		
Beef cows	1,250	188
Replacement heifers	265	20
Fed cattle	420	599
HOGS		
Market hogs	2,560	1,536
SHEEP		
Stock sheep	1,473	22
DAIRY		
Cows	287	129
Heifers	143	32
POULTRY		
Hens and pullets	8,415	349
Chickens raised	850	13
Turkeys	850	45
Total tons fed annually		2,933

Summary

Annual Supply and  
Consumption 1958 - 62  
(Thousand Tons)

Feed grains produced	4,818
Feed grains consumed	2,933
Seed	152
Surplus of feed grain	1,733
Percent of feed grain used in South Dakota	64

<sup>1/</sup> Consumption rates based on factors for grain consuming animals developed in, Livestock - Feed Relationships 1909-1963, USDA Statistical Bulletin, No. 337, Nov. 1963.

Another trend in cattle feeding has been to larger scale operations. At present there are at least 16 feed lots in South Dakota with a capacity of 1,000 head or more fed annually. While most of the increased cattle feeding is expected to take place on commercial family farms, automation, bulk buying of feeds, and stronger bargaining power in both buying and selling cattle will favor larger feeding units. Because of the abundant supply of both feeder cattle and feed grains in South Dakota, it is estimated that the number of fed cattle marketed could be doubled in the next 10 years.

### Hog Production

South Dakota also has a good potential for increased hog production. Available feed supplies and production capacity would permit at least 50% increase in hog production over the next 10 years. Although there has been considerable year-to-year variation, the average number of hogs marketed annually between 1958 and 1962 was about 2.6 million head.

In recent years, hog production has also tended to become a more specialized operation. The number of farms reporting hogs in the state has been declining while the number of hogs marketed per farm has been increasing. As in the case of cattle feeding, more specialization can be expected. This will be necessary in order to take advantage of new technological developments in hog production. Better breeding, housing, feeding, quality control, and marketing may be the difference between success and failure for hogs in the future.

### Other Feeding

Past trends in production would indicate that increased feeding in other enterprises appears less likely in the next 10 years. However, a 20% increase in poultry and egg production appears possible. The number of dairy cattle in South Dakota has been declining, but due to increased output per cow, total milk production has increased somewhat in recent years. A 10 to 15% decrease in milk cow numbers, and a 10% increase in milk production appears possible over the next 10 years. This increase in milk production from fewer cows would require higher rates of concentrate feeding and is accounted for in the projected consumption rates.

### Summary and Projection

A potential 10-year expansion in livestock production and feeding for South Dakota is summarized in Table 2. This estimated expansion is based primarily on past trends in production, future increases in demand, and availability of feed supplies.

South Dakota producers will get this increase only if peak efficiency is used in every phase of production. This will be necessary in order to survive the strong regional competition. Then too, expansion will come only if substantial investments are made. The profitability of investing new capital in livestock enterprises will depend to a large degree on the cost-price relationships existing between regions.

Table 2. Ten-Year Projection of Livestock-Feed  
Grain Relationships for South Dakota

Assumed Changes in Livestock Production and Feed Consumption 1/

<u>Kind of Livestock</u>	<u>Percent Change in Numbers (Percentage)</u>	<u>Total Number of Livestock (Thousand Head)</u>	<u>Total Feed Grain Required Annually (Thousand Tons)</u>
BEEF			
Beef cows	30	1,625	260
Replacement heifers	30	345	28
Fed cattle	100	840	1,277
HOGS			
Market hogs	50	3,840	2,458
SHEEP			
Stock sheep	30	1,915	31
DAIRY			
Cows	-15	245	175
Heifers	-15	122	37
POULTRY			
Hens and pullets	20	10,098	444
Chickens raised	20	10,020	16
Turkeys	20	10,020	57
		Total tons	4,783

#### Summary of Assumed Changes

#### Projected Annual Supply and Consumption on Feed Grain (Thousand Tons)

Total Feed Grain Production	6,618
Consumption	4,783
Seed	152
Surplus	1,683
Percent used in state	75

Assuming no major departure in farm policy or prices, it is also possible to make a rough estimate of potential increases to the state's farm income from an expanded livestock industry. The annual realized gross income from the sale of livestock and livestock products could be increased an estimated 40% or \$190 million, over the next 10 years. This would mean an estimated increase in annual net returns to South Dakota livestock producers of about \$50 million per year.

1/ Consumption estimate assumes a 5% increase in the amount of feed grain consumed per animal unit, which provides for feed grain to be substituted for roughage.

## Potentials for Increasing Income From Processing and Marketing

Dr. Donald B. Erickson  
Assistant Professor

Increasing the income from marketing can come from new or diversified types of processing plants or expansion of number or volume of existing marketing firms.

Marketing is the performance of all business activities involved in the flow of goods and services from the point of initial production to the ultimate consumer. The number of services performed varies, depending on the type of product, perishability, bulkiness, and the particular form the consumer wants the end product.

Increasing incomes of consumers in this country have made it possible for the housewife to transfer many of her duties back to processing plants or marketing firms. The housewife is willing to pay for services which increase the cost of marketing.

It cost \$46 billion in 1963 to move the entire United States farm production, by some 7 million farmers to the 190 million consumers. The farmers received \$21 billion for the total farm production.

Higher total marketing costs come from the increased services and volume. For every \$1 the consumer spends, the farmer receives 38 cents and marketing interests receives 62 cents. Even though the farmer's share of the consumer's dollar has been decreasing, total income to the agricultural sector has been increasing even with the declining number of farmers.

The share that the marketing channel derives depends on the degree of processing necessary to convert the raw product as it is produced by the farmer into the finished product that the consumer is willing to buy. The more processing necessary, the greater will be the market share.

<u>Items</u>	<u>Farmer's share</u>	<u>Market share</u>
Eggs	66%	34%
Beef	58%	42%
Pork (retail cuts)	52%	48%
Lamb	46%	54%
Canned Corn or Peas	12%	88%
Bread	11%	89%
Corn Flakes	10%	90%

Included in the market share is the cost of transportation. South Dakota is a surplus producing state; thus most of the production has to be shipped to the consumption centers. Greater transportation costs result if the raw product being shipped is bulky and perishable. A certain degree of processing could be accomplished within the state to reduce bulkiness, increase transportability, and improve uniformity of the product. These types of marketing functions should be encouraged. The ideal type of

processing firm to encourage is one which obtains the greatest proportion of the consumer's dollar. However, there are many factors to consider before a new plant is chosen for a relocation in the state. The development of any new processing plant in South Dakota will increase the income but individual commodities must be considered.

### Market Structure

South Dakota has two major agricultural production classifications -- crops and livestock. Let's look at the marketing structure of these two major commodities. Cash sales from crop production provided 23% of the farm income in 1963, while livestock and livestock products returned about 69% of the farm income.

#### Nonfeed Grains

The nonfeed grain, such as wheat, would be a commodity which would appear to increase income from marketing and processing if processing plants were to be established in South Dakota. As noted earlier, 89% of the consumer's dollar is retained by the marketing firms. There is relatively little to gain from transportation costs since approximately 6.9 pounds of wheat are required to produce 5 pounds of flour. In any event only part of the processing, milling, could be accomplished within the state. However the miller obtains only 10.7% of the consumer's dollar which would add to the income of the state. The baker receives 55.4 and the retailer 16.4. Bakery goods could not be produced to be marketed anywhere but locally. Thus, the flour would have to be shipped and most of the processing would still take place in locations where the consumer demands fresh bread and other fresh bakery goods. The expansion of marketing firms in nonfeed grains does not increase income as much as it initially appeared.

Sugar beet processing would add considerable income to the state from the point of view that the processing of sugar beets requires a plant which could employ resources now idle. In addition the savings in transportation alone would be very large. From the standpoint of reducing bulk alone the savings in transportation would be substantial since 37 pounds of sugar beets are required to produce 5 pounds of sugar. Two-thirds of the consumer's dollar goes to the market share, and this could be one enterprise which could be expanded. The production of domestic sugar beets has been increasing partly as a result of the Cuban situation. Some of our source of sugar will continue to come from domestic production. However, consideration must be given as to the local production and the variability of local production.

#### Livestock Products

South Dakota ranked 5th in wool production in 1962. Because of the physical properties of wool, storage and shipping do not affect the quality. There could be a considerable saving in transportation by scouring the wool before it is shipped since over half of the weight is grease and dirt. However, the variety of wool that is produced in the state would require several different processing plants or great care in sorting before scouring. After the wool has been scoured, grading and sorting is almost impossible. However, if a firm were to set up a scouring plant and could build up a desirable reputation, or if it were a subsidiary of some mill, considerable savings could be made in transportation and some additional income could be provided.

The relatively small share received by the market for eggs would indicate that an increase in the processing and marketing facilities would add little to the income of the state. Most of the marketing cost is involved in transportation and packaging. Expansion of milk processing seems to be limited because of the surplus milk production in the country as a whole. Expansion of the dairy industry seems unlikely in the near future. However, new and more efficient processing plants may replace the older ones as the existing herds continue to increase production per cow.

### Livestock

Marketing channels for sheep and lamb include shipping animals or carcasses to the East Coast where the majority of the consumption exists. Mutton and lamb carcasses tend to lose some of their bloom if there is a very large lapse in time from slaughter to consumption. If some improved method of preservation were available and with more rapid transportation facilities, the possibility of a plant which processes mutton and lamb would be more feasible. However, the proportion of the total South Dakota farm income from sheep, lambs, and wool is only about 3.4%.

The market structure for hogs includes slaughtering, then breaking the carcass into various wholesale cuts which are processed differently and sold separately. During the past 5 years 87% of the hog production was slaughtered within the state, based on national average consumption figures, while only 9% of the production was consumed in the state. Expansion of hog slaughter and processing is limited unless production is increased.

The marketing structure for beef and veal is similar to mutton and lamb in that generally the whole carcass is moved into the wholesale channels. During the past 5 years, 38% of the production was slaughtered in the state, while only 9% was locally consumed, based on national average consumption figures. The marketing share of the consumer's dollar for beef is approximately 42 cents. However, considerable savings could accrue to the state if a larger portion of the cattle production were slaughtered here.

There is considerable difference between the transportation costs of shipping carcasses when compared with shipping costs of equivalent liveweight animals. For example, the total cost of shipping a carcass to New York City from Sioux Falls is \$14.12 while the total cost of shipping a live animal would cost \$24.03 or \$9.91 per animal more. (See Table 1)

The number of small slaughter plants in the state has been decreasing since 1959. This decrease has been in plants that slaughter less than 300,000 pounds liveweight per year. The number of plants that slaughter 300,000 pounds and over has not changed since 1959. From 1947 to 1963, the number of federally inspected slaughter plants in South Dakota (the only plants that can ship interstate) remained at 7. During the same period federally inspected plants increased from 13 to 15 in Minnesota, 20 to 34 in Iowa, 13 to 32 in Nebraska, 31 to 38 in Illinois, and 7 to 18 in Colorado.

Table 1. Railroad Transportation Costs for Shipping 1150-Pound Beef Animal, Live and Dressed-Weight Bases, Sioux Falls to Other Regions

Destination	Liveweight Cost		Dressed-Weight Cost	
	Per Hundred Wt.	Total	Per Hundred Wt.	Total
Raleigh, N. C.	\$ 2.09	\$ 24.03	\$ 2.08	\$ 14.12
New York City	2.16	24.83	2.28	15.54
Detroit, Mich.	1.72	19.77	1.59	10.80
Los Angeles and San Francisco, Calif.	2.26	25.98	2.79	18.97

Source: Dwayne Myers "Cost of Producing and Marketing Finished Beef in Relation to Consuming Areas" Economics Department, Agricultural Experiment Station, South Dakota State College, Agricultural Economics Pamphlet 114, Oct., 1963, p. 21.

#### Greater Marketing Efforts by Producers

Producers can also increase their incomes by improving their selling practices. They can improve their income by obtaining more information concerning alternative prices at various locations in conjunction with the transportation costs and loss due to deaths or spoilage during shipping. In addition, if a greater attempt were made to improve their understanding concerning the grades and standards desired by the consumer, and if they would then produce a more uniform grade commensurate with consumer's desire, the marketing firms would be able to process the raw product at less cost. This reduced cost is generally passed back to the producer in the form of higher prices.

#### Conditions for Marketing Expansion

Conditions conducive to expansion of marketing functions include a combination of factors: (a) type of firm that can perform a processing function which will substantially reduce transportation costs, improve the transportability of the goods, and at the same time convert the raw product, as much as possible, to the form that the consumer will be willing to buy; (b) type of plant that doesn't require "too large" a capital investment in relation to the available supply or potential supply; and (c) availability of adequate transportation to the population centers, since the major portion of all production is shipped out of the state.

Increasing the marketing functions performed within the state will not only increase the income but will utilize resources which may otherwise be idle. These idle resources will migrate out of the state unless they are utilized within South Dakota.



## Potentials for Increasing Income From Recreation

Galen Kelsey  
Extension Agent, Resource Development

The Outdoor Recreation Resources Review Commission has estimated that Americans currently spend in the neighborhood of \$20 billion annually for outdoor recreation. The share of this market which South Dakota's can capture will depend on the understanding of the recreation demands and desires of people and the recreation resources which will be developed to meet such demands.

Our recreation resources might be roughly divided into three broad categories -- scenery, game, and water. First among these, in terms of resources attracting the greatest number of people to the state, is scenery.

The State Highway Commission estimates that \$150 million was spent by tourists in South Dakota in 1963. In a state with a population of around 700,000 people an expenditure of this magnitude has a definite and beneficial impact upon our economy.

Another major recreation resource is our game. In 1962 over 57,000 non-residents purchased small game hunting licenses. Their expenditure for licenses alone was nearly \$1 1/2 million. Total spending by this group was estimated to be in excess of \$11 million or about \$200 per hunter.

The third recreation resource we have and one that has great promise for growth is water. In addition to the four great lakes created by the multi-purpose dams on the Missouri, we have other lakes that attract local residents and visitors as well.

Nonresidents purchased over 43,000 season and visitor fishing licenses in 1962 for which they spent over \$75,000. Boating, water skiing, and other water sport enthusiasts from outside the state no doubt also contributed to the state's economy although we do not have a complete record of their number.

Outdoor recreation is already big business in this state and we have by no means reached the peak of its potential. Recreation attractions available in South Dakota rate high on the list of leisure time activities of most Americans. Sight-seeing is the number one family recreation activity. One in every five American males hunts and one in four is a fisherman.

How then, can we increase the revenue from outdoor recreation (which includes tourism) and increase the number of people coming to South Dakota in search of recreation? Perhaps the most important goal is to have satisfied customers. This has long been described as the most effective type of advertisement. This is particularly true for the recreation business. The vacationer traditionally takes pictures and collects souvenirs so he can boast of his vacation experiences to his friends at home. The overall image of the state, as a pleasant place to spend a vacation, therefore, is extremely important.

Most of the highways in South Dakota are of relatively high quality, but the view from them in many instances does not create a favorable impression of the state. Abandoned farmsteads; unkempt and unpainted buildings; and faded, weather-beaten signs that advertise businesses that no longer exist and auto junkyards are remembered by our visitors along with Mt. Rushmore and the Corn Palace.

Perhaps counties along the inter-state highway system should consider rural zoning to control the type and number of business establishments as well as the size and quality of billboards along these highways. Tree planting might also be planned on these and other existing tourist routes.

The problem of providing enough land upon which an increasing number of hunters can hunt and the dwindling acres of natural game habitat are becoming serious limitations upon the growth of hunting in South Dakota. Since most of the land in the state is privately owned, any substantial increase in hunting space must come from that source.

Perhaps one solution to this problem is some equitable system of payment to the landowner for the production of additional game and the right to harvest it. Historically the benefits from hunting have been reaped by those that provide hunting equipment and services while the landowners have sustained losses from game and damage from hunters. The net result has been the closure of many private lands to hunters.

For example, in two counties of Pennsylvania, deer hunters spent \$1,400,000. Of this farmers received about \$42,000 but their losses from the deer population and hunter damage totaled \$195,300.

If a greater share of the revenue from hunting were returned to the landowner or collected directly, perhaps the farmer would be more inclined to regard the game on his farm as another one of his important income producing crops. As such he would be interested in increasing the production and allowing the harvest of that crop.

Water as a recreation resource in South Dakota is relatively new. In regard to the newly created Missouri Lakes we have an opportunity to build the kind of image that is most desirable.

Water is a tourist attraction as well as a necessary element for fishermen, boating enthusiasts and some kinds of hunting. Planning for the people that will use our lakes and zoning to build the orderly development of these areas will create a desirable image and help to avoid problems later. Land set aside for trees will improve the landscape. Developments should be of a nature that complement the setting. A collection of tar paper shacks, obsolete trailer houses, and worn out school buses do not add to the attractiveness of areas and they constitute a health and fire hazard in the community.

Scenic, well-maintained access roads to the recreation areas should be provided to speed development. Many of our lake areas are lacking in concessions that are generally regarded as necessary for pleasant recreation experience.

Direct benefits from outdoor recreation accrue only to those who have a location advantage. But growth and development of the state's recreation resources can result in many indirect benefits to all the people of South Dakota. These indirect benefits might be listed as: increased business activity as a result of spending by visitors, sharing our tax burden by taxes collected from tourists, and growth in tax base as a result of private investment in summer homes, concessions, and sporting equipment. But perhaps most important, our state will be a more attractive and pleasant place in which to live.

## Potentials for Increasing Income From Business Management

Ralph O. Felberg  
Assistant Professor

Management is a resource. It is just as important to the economy of South Dakota as land, labor, and capital. Management is a critical resource in that the men and women in managerial positions decide how the other three resources are to be used. These decisions are a basic determinant of the level of our production and income.

Management is a resource that we do have but it needs to be more fully developed, both in quantity and in quality. In the past we have made very feeble efforts to develop or obtain well qualified people to manage. Failing to do so has provided our competitors with an advantage and this is charity that we cannot afford. The need for the use of sound management is present in all our activities. But it can be best explained by examining the business enterprise and business management.

The purpose of a business and the reason why an individual or a group of individuals enters business may not be the same. The purpose of a business must be service. Every business organization must have a product or service to make and/or sell; a product or service for which there will be a demand. There must exist production facilities and production know-how to create the product or service to the satisfaction of the consumer. A plan of production must be formulated to utilize men, materials and other facilities in such a manner that the product or service is produced when consumers want it and at a price they are willing to pay.

People enter business for various reasons but the underlying motive should be the desire for profit modified perhaps by some other drive. Many persons enter into business because of the desire to be independent. The lifelong desire or ambition to be independent is so strong that the obvious hazards of the business enterprise are overlooked.

Many individuals become frustrated by working for somebody else because they cannot engage in work which is satisfying or because they cannot fully utilize and develop their abilities. A business venture motivated by this desire will have a much better chance of success than one motivated simply by the desire to be independent.

A demand for a product or service and an absence of facilities to adequately satisfy this demand invites new enterprises to exploit or take advantage of the unsatisfied demand. The temptation to enter business under these conditions is very great because there is, for a time at least, an absence of normal competition, and a person with meager management ability can operate the enterprise profitably. The danger is that sooner or later the advantage of limited competition will cease, and such a venture is doomed unless its management learns to operate in a competitive market.

Many people enter business to capitalize on a new product that they have developed. In this instance the basic motivation comes from a product, and there may or may

not be a satisfactory market; and the promoter may or may not have the necessary managerial talents. If a business promoter plans his activity on the premise that his product is better than all others, that there is a market for it, or that consumers will pay a particular price for it without first ascertaining that each of these is true, then the entire operation may be headed for trouble.

One distinguishing characteristic of small business such as we have in South Dakota is simply the limited size of the management group. This lack of "depth" in management might prove disastrous with the unexpected loss of one or two top-ranking team members. A second trait of the small firm is that the manager makes most of the major decisions as well as many of the minor ones. A third characteristic of small business is that ownership and management are closely related, oftentimes centering in one person.

The management in many small firms places great emphasis upon the execution of daily procedures, handling individual problems from day to day without concern for long-range plans. Management thus focuses upon short-run tactics, rather than upon longer-run strategy, to the point of neglecting measures needed to ensure that there will be a future for the business in a changing world.

Geography and product specialization both provide special, limited markets effectively served by small business concerns. Flexibility and adaptability are virtues of many small businesses, contrasting sharply with the cumbersome procedures of large organizations. The small businessman is also close to customers and employees, and this closeness provides a potential superiority over the large impersonal firm.

There is a tendency for the research of big business to emphasize the improvement of existing products. And thus many revolutionary ideas often originate outside large business organizations. Small businesses may compete with larger and usually older businesses by utilizing their ability to innovate and to move rapidly from original opportunity to the finished product.

The key factor in the success of many small businessmen is not the fact that they know something about every aspect of business or are extremely capable managers. On the contrary, the key is the fact that they have one or two specific skills around which their company is specialized. The small businessman running such an enterprise can profit by becoming more skilled in over-all direction of affairs. Yet he should not do so at the sacrifice of his specialized operating abilities. These specialized abilities may comprise the heart of his company.

A businessman may be operating an enterprise which, at present, is successful and thus may feel that in his case there is no need to consider the causes of business failure. The wise move is to consider why others have failed and take precautionary measures to prevent a similar situation.

More business ventures fail because of poor management than for any other single cause. Frequently a businessman will blame his plight on "economic conditions"

over which he has no control, but it cannot be emphasized too strongly that in a vast majority of cases business failures are human failures.

One evidence of poor management causing business failure is insufficient capital. The business may have been started with too little owner equity or the owner may have withdrawn money from the business faster than it was being earned. The seemingly apparent reason for failure may be insufficient capital but the underlying cause of trouble is poor planning by poor management.

Many business organizations fail because the owners or managers do not have adequate knowledge concerning the progress of the firm. In other words, because of inaccurate or inadequate records management has no sound basis for making intelligent decisions. An intelligent businessman may be able to carry an amazing number of facts and figures in his head but sooner or later the time will come when either because of the passage of time or the growth of the business, this method will prove unsatisfactory.

The shortage of managerial manpower in small business is mainly due to a failure until recent years to recognize that managerial jobs require abilities not involved in mere technical know-how. The selection of managers on the basis of technical knowledge alone demonstrates failure to recognize the essential characteristics of management.

Management behavior is distinctly separate and apart from the more obvious "doing" activities in organizations. A manager needs to learn a great deal more than what is involved in "learning a trade." One of the most convincing demonstrations that management is a separate entity is found in the transferability of management skills. Managers have been able to move successfully from one industry to another of a very different type.

Every manager must get his subordinates to work together effectively. Such coordinated effort is sought by the managerial functions of planning, organizing, directing, and controlling the work of others. While the functions of managers are the same, their methods may differ. This is not necessarily undesirable. Some managers are swamped with current problems. They operate on a "put-out-the-fire" basis. At the other extreme are managers who think ahead, planning and erecting "fire-proof" structures. The latter puts the emphasis on planning, the former places the emphasis on controlling.

It is commonplace to make decisions on the basis of one's own experience. If one's experience is good this method is simple and quick. But few people have experience broad enough, however, to cope with all the problems they encounter. In addition, experience may be a poor teacher--especially if we do not observe and analyze our mistakes and if we fail to correct them. Should it not be possible to decide upon the basis of experience then recourse must be made to trial-and-error or scientific analysis. Although the latter is difficult, costly, and time consuming, more and more managers are turning to it in decision making.

Business has not stood still nor should the businessman. Managers should be constantly seeking ways to improve and refine their operations. They must recognize that change is inevitable and desire to be a part of the progress. The wise manager not only considers the objectives of the present but prepares to adjust to what the future may bring.



If small businesses today are to succeed, and in some cases, survive, they must constantly strive to find ways to "do it" better. How things were done in the past and how they are done somewhere else are only starting points. The manager must understand what needs to be accomplished and why it is wanted. Although some governmental programs are designed to assure its future, small business should place the greatest reliance upon efficient management in meeting the uncertainties of tomorrow. As management quality improves, efficiency in the utilization of human, as well as material, resources will grow. Efficient management of small business is vital, not only to the owners and managers of these businesses but also to the communities in which they are located and to the public they serve. How well we manage our businesses (including the farm business) will influence, if not determine, how well we can compete with other regions.

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### Potentials for Increasing Income From Financial Management

Dr. Kenneth R. Krause  
Assistant Professor

Wise capital management will bring forth the goods, services, and leisure that man desires. It will be capital that is invested in research to develop new machines that will free men's hands and backs from physical work. It will be capital that will further develop our land, labor, and management resources to produce the added basic necessities for an expanded population. It will be capital that will bring forth the formerly thought of luxury goods in such quantities that they will be necessities in the years ahead. Thus, with this being the case, it will be wise capital use that holds one of the important keys to generating greater income for the nation and for South Dakota.

### Background of Capital Use in South Dakota

In the pioneering days, South Dakota's income came essentially from agricultural production and a limited development of physical resources such as the gold mines. Through time, the growth of South Dakota has depended on agricultural production. It appears that the basic physical resources in developing the economy in the years ahead will be our raw agricultural products. But, to an increasing degree income in the future can be expected to come from the development of our nonfarm resources, such as from recreational resources.

The big task ahead for South Dakotans is to determine the areas or activities in which capital should be invested to bring forth the greatest returns. It will also be necessary to determine whether increased activities in these areas will support and/or increase our comparative advantage with other areas of the nation with which we compete directly and indirectly for the right to produce and receive an income. This is the case since in an economy such as ours, men more than their physical and institutional environment shape things to come since our institutions and increasingly, our environment are man-made. In the final analysis, then, South Dakotans as individuals consciously or unconsciously will determine their own levels of income and growth. As a group of individuals it will be determined for the state.



Of the four resources used in production -- land, labor, management, and capital -- the latter in the form of money is the most mobile and easily expanded or contracted. It is a tool to be used to satisfy human wants.

### The Present Capital Use Situation in South Dakota

Currently we don't have precise answers to direct new capital use in South Dakota and we don't know if our existing capital use is wise or adequate. But, to develop reasonably precise answers we need to first try to identify problems and ask the right questions. In other words we need to first determine the most desirable capital uses in South Dakota. This may include questioning the state's image and the potential in the state. The big question is what amounts and types of new capital will be needed and what changes will be required to meet these needs. Evaluation of our capital institutions in terms of their ability to meet the needs will be called for.

In the last decade we have seen our country change to one that has been termed a research and development nation. That is, we look for our growth through research results and the development of new goods and services as the result of research findings. Many of our research results have been forthcoming from a younger generation of educated people. These research findings have important implications for capital use.

Research and development, in general, is a two stage capital investment proposition. Through research expenditures we first discover income generating potentials and with added capital use in development added income is generated.

From research that has brought forth new and better ways of producing, people are relieved from physical work and have increasing amounts of leisure time. With the increase in leisure time, we will be challenged to use it productively. The movement in this direction will permit more mental activity which stimulates development of brain power and is a type of capital investment.

The added hours of leisure that appear in store will need to be used in mental or brain work. This has been the nature of leisure historically. In ancient Greece the people, freed from physical work, developed the basis of modern day mathematics and art. A striking difference exists between the leisure era in Greece and our modern era however. The physical leisure group in Greece achieved their goal of leisure through slavery. We have and will increasingly achieve our leisure through capital use that is expected to free all classes of our people from physical drudgery.

### Areas of Capital Use

Potential areas of increased capital use in South Dakota appear to be varied and numerous. First we will discuss general areas of capital use, later more specific areas.

One of the basic means of increasing income in our modern era is through individuals who are able to understand phenomenon, recognize opportunity, and capitalize on their knowledge. With the increasing complexity of our society, it appears that it will become even more important that we increase the educational level of all of our people.

It appears that financial resources invested in education at all levels holds one of the highest average returns on capital investment for income generation. T. W. Schultz, economist University of Chicago, has shown that for each dollar spent on all education in this country there is a return on the average of about 17¢ each year -- a 17% return on investment. He found that the return on investment in elementary education is about 30% per year. In comparing either the 17% or 30% figure with other alternatives, one is impressed with the potentials of generating higher levels of income through investment in education.

As a result, in part from potential educational returns, a change in philosophy of our farm people appears to be taking place. As little as a generation ago it was often felt that the finest thing that could be left to the children was a mortgage free farm. A more prevalent philosophy now may be that the finest thing we can give them is high quality education and training available to the extent of their ability.

### Investment in Agriculture

Research and development is not isolated in any one segment of our economy. Much of the change that is occurring in farming and farm related industries is the result of research. While the yearly net return to capital used in farming is relatively low, research expenditures in agriculture have been one of the bases for the real progress in this county. This progress on net balance has improved the lot of our society through releasing the majority of our people from the necessity of producing food and fiber and through relatively low food prices.

A recent agricultural economics research study suggests that it may be important for South Dakota to increase expenditures in agricultural research and development. This may be necessary for South Dakota to hold its own relative position in agricultural production. The study related cause and effect between agricultural research expenditures in a state and adjusted farm income. That is, the states with the higher agricultural research expenditures tend to have the higher farm income. It may be however, that states which spend more for agricultural research do so because they have higher incomes.

While much research remains in this area, the study does give us some insight. If the trend toward specialization in agricultural production increases, it may prompt more specialized types of agricultural research. Thus as our neighboring Corn Belt and Plains States narrow some aspects of their research to problems peculiar to their states, South Dakotans will be able to draw less on their research. That is, what is wise capital use in New York may not be at all similar to wise capital use in South Dakota if we are to generate higher incomes from agriculture in South Dakota. This suggests a need for greater research expenditures on agricultural problems keyed specifically to South Dakota conditions. This does not imply, however, that research expenditures on problems common to other states should be ignored in South Dakota's research program.

The expectation of applying research results based on situations in other areas holds some danger. It is observed that the area in which research is completed appears to lead in adoption of the knowledge gained. Hence, in order to gain the maximum from

research in other areas South Dakota cannot afford to be far behind in finding and adopting new ways of agricultural production. If research results can be borrowed from other states, the wise choice appears to be to expand limited dollars on only those problems that results can't be borrowed for.

There are many unanswered questions in terms of generating greater income from South Dakotas agricultural resources. A limited number are here mentioned that research expenditures and work can help to answer:

1) Each of the areas discussed in the section dealing with development of physical resources appear to deserve further study. It was pointed out that potential increase in crops, livestock, agricultural processing and recreation are major. However, the question has not been answered of whether the demand will be sufficient for each so that a favorable return would be forthcoming to justify the expansion.

2) South Dakota farmers currently appear to be investing in their businesses as the potential demand for their products exists. On many farms the trend is to high fixed cost investments in specialized buildings and equipment. But if the demand and price shifts for the products, what alternatives for use of the fixed cost items will there be? To this question we don't have the needed answers.

3) There appears to be some trend toward leasing farm equipment and buildings. To date we don't have answers as to the advisability and success and problem elements with these arrangements. It is a problem that we appear to need answers for.

4) For some farmers the available capital supply appears to be too limited. To gain control of greater amounts of capital some emphasis is currently placed on a type of equity farm financing. With this approach a part of a farm real estate loan would not have to be repaid over several generations. It appears that we need answers in each of these areas.

5) With the continued emphasis on efficiency in agricultural production, South Dakota farmers will continue to vie for the right to produce. This will likely mean that fewer but larger farms and ranches will be required. A major problem in the acquisition and use of capital is evident in this area. The central problem appears to be how the "right" farmers can gain control of more capital and how they should use it to increase efficiency.

6) The average age of South Dakota's farmers is such that some new and young farmers will have some opportunity each year to farm. With current capital requirements in farming, a major question exists in how the young farmer can gain control of enough capital to operate a unit that is efficient enough to compete with others in agricultural production.

7) It is recognized that considerable uncertainty exists in agricultural production in South Dakota. More knowledge on how to effectively plan and handle enterprises appears to hold promise to generating greater farm income in the state. It may be that

nonfarm investments should receive a more important role than they have in the past in farm planning.

8) Little is known in the area of increasing farm incomes from the use of farm resources in recreation. At present we don't have a framework in economics for treating recreation potential in managing a farm business. It may be, for instance, that the pheasant should be considered as a farm enterprise the same as the pig and the corn crop currently are. At a minimum the ringneck appears to have potential on many South Dakota farms to replace the Leghorn as a source of supplemental farm income. The potential may be much greater if and when the facts are developed.

9) Technological change at the farm level in terms of output in this country has been increasing at about 2% per year. A recent study indicates that this change in farm output per unit of input has changed to about 4% per year. Two major problems are evident for South Dakotans in this area.

- a) How can South Dakotas agriculture in total share in this increase?
- b) How can the individual farmer appraise and stay on top of the many new possible ways of producing and intelligently adopt the right ways for his operation? The potential for irrigation may hold one of the considerations in this area.

The big question that remains is if and how we are going to develop answers in these and other areas in South Dakota.

#### What the Farmer Can Do to Increase His Income

Many unanswered questions are evident for South Dakota's farmers and the state's agriculture. It appears that individual farmers can continue to move forward the most rapidly in part by greater use of the traditional well developed planning tools. Greater use can probably be made of budgeting and farm programming techniques. Budgeted loans of both a short and intermediate nature can be useful. More emphasis can be placed on short and intermediate type loans. Greater use of intermediate credit can likely be made in expanding permanent mechanized cattle and hog operations. This type loan will need to be budgeted to be repayed over several production periods. Credit institutions and borrowers will both need to sharpen their management analysis and ability to handle these higher fixed cost operations.

While the trend in expanded capital use in farming appears likely to continue, a word of caution is in order for the young or beginning farmer with very limited capital. Wise financial management would suggest going slow in investing limited capital in large, expensive machines and equipment. Used machines that may require greater amounts of labor, but which the young farmer generally has in greatest relative supply, is called for. Livestock enterprises with the most frequent turnover, such as pigs and sheep that require less capital and more labor relative to cattle feeding, also appear worthy of the young farmer's consideration.

### Investment in the Industrial Sector

While focus has been placed on South Dakota's Agriculture, it is realized that to fully develop the State's income potential, the industrial or nonfarm sector will need to be given added emphasis.

The following questions are some that appear to merit consideration.

- 1) What is the potential for recreational development along our rivers, highways, and other areas and how can they best be developed?
- 2) What is the potential for development of greater income from gas, oil deposits, low grade ore, gold, the logging industry, and the military and how can they further be developed?
- 3) South Dakota doesn't have and likely won't have the locational advantage and the specifically trained brain power to attract major scientific institutions of the nature of electronics or nuclear energy to the state. But if explored we may have some potential for attracting processing and small manufacturing plants. It may be necessary to develop a new tax basis to attract some of these smaller plant potentials. If the question can be answered of what the potential is in these areas and what needs to be done to develop the potential, risk capital in large amounts appears to be available to finance such ventures.
- 4) A large percent of South Dakota's retiring population are farmers who traditionally have not traveled widely and may have a preference to retire near home. It may be that the state's income could be increased through development of more adequate retirement facilities. Would it be a prudent investment for some of our smaller towns to provide sewers, water systems, and other facilities in an effort to attract elder citizens?
- 5) Finally, the federal government is certainly in more areas than in farming. The Rural Areas Development Program is an example. This program may provide valuable assistance. There may be more potential help from this program in South Dakota than has been used. For instance, help may be available to bring in new industries, or to expand existing industries, to expand watersheds and to expand nearly all recreational areas in the state. However, to most wisely guide such help, we need answers on the returns that can be expected from such ventures.

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### Potentials for Increasing Income From Tax Management

John D. Leonard  
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### Introduction

This discussion will be predicated on the dual-proposition that is is not reprehensible for a farmer, a businessman, or any other taxpayer to "avoid" paying as much federal income tax as he can, and that any tax so avoided by South Dakota taxpayers

serves to increase the disposable income available in South Dakota. "Tax avoidance" isn't a dirty phrase, it is merely taking advantage of everything the tax law allows in the way of income exclusions and deductible expense inclusions.

Optimum tax avoidance can be achieved through informed tax management. Tax management, then, from the standpoint of the federal income tax, can be defined as the minimization of taxable income and the maximization of deductible expenses in a given tax year.

At the outset, it must be pointed out and emphasized that sound tax management requires adequate records for a farm or business, because without such records many tax advantages that would normally be available to a farmer or a businessman might be lost because of inadequate evidence in claiming the tax advantage.

There are also certain fundamentals of federal income tax law that the businessman or farmer should understand and intelligently apply. Some of these basic items are:

(1) The relative advantages and disadvantages of reporting income and expense under the cash method of accounting as compared with the reporting of income and expense under the accrual or inventory method of accounting.

(2) The tax reporting dates applicable to the farmer or to the businessman, and the penalties that will be involved for noncompliance with the reporting date deadlines.

(3) The relative advantages and disadvantages involved with accelerated depreciation of capital equipment as compared with the straight-line method of depreciation.

(4) The relative advantages and disadvantages involved in trading in old machinery and equipment for new machinery and equipment as compared with an outright sale of the old machinery and equipment, and a purchase without trade-in of the new machinery and equipment.

Neither a farmer nor a businessman needs to be a tax expert, but he should know enough about taxes to recognize the income-tax aspects of a farm or business decision. For if he knows when he is apt to be confronted with a tax problem, he will know when he needs to seek tax advice from a qualified attorney or accountant.

Since it has just been pointed out that the businessman or the farmer should be well enough informed about federal income taxation to be aware of possible tax problems, and since on February 26, 1964, President Johnson signed into law the 1964 Revenue Act, the balance of this discussion will be devoted to the changes and innovations this law has brought into the field of federal income taxation.

#### The 1964 Revenue Act

The 1964 Revenue Act was the first major overhaul in federal income taxation legislation since 1954. By the end of 1965, the 1964 Revenue Act is expected to result in a tax-saving of \$11.5 billion to the American taxpayers.



The 1964 Revenue Act has a threefold purpose: (1) A cut in tax rates, (2) new tax "breaks" or advantages, and (3) the taking away of previously allowed tax advantages. Overall, much greater success was achieved under the first two purposes than under the third purpose.

To many persons, the new tax advantages will mean tax savings far more valuable than the tax rate cuts. To others, the so-called "loophole closings" will be bad news--cutting, and even wiping out savings from the rate reductions.

### Rate Reductions

First, looking at the rate reductions achieved by the statute--individual tax rates are reduced in every bracket from the lowest to the highest in two steps. The lowest tax rate will fall from 20% in 1963 to 16% in 1964 and to 14% in 1965. The highest tax rate will fall from 91% in 1963 to 77% in 1964 and to 70% in 1965. The old withholding rate of 18% has been cut already to 14% and take-home pay has been increased by the difference.

Tax rates for corporations are also being reduced in two steps. For corporations with net income up through \$25,000 the rate will fall from 30% in 1963 to 22% in 1964 and 1965. Tax rates for corporations with net income of more than \$25,000 will fall, on the portion above \$25,000, from 52% in 1963 to 50% in 1964 and to 48% in 1965.

When fully effective in 1965, the reductions will mean an average rate decrease of more than 14% for all taxpayers. However, the 1965 reduction for the first \$1,000 of taxable income--\$2,000 for a married person--will be about 27%.

In 1961, since two-thirds of United States farm families had taxable incomes of less than \$2,000, this reduction, the highest in the program, will be particularly significant in South Dakota with its large number of farm families. The overall effect of the reduced rates will mean a tax reduction of \$250 million to \$300 million from the more than \$1.3 billion paid by farmers under the old rates, and should create considerable additional disposable income within South Dakota.

Although tax rates have been lowered for all corporations, those with incomes of \$25,000 or less receive by far the biggest proportionate benefit from the reductions. This is of special significance in South Dakota, which has many more small and medium-size corporations than it has large corporations.

What does this mean to you as a businessman or farmer? If you are operating as an individual proprietor or are in a partnership, you should carefully weigh the comparative advantage of switching into a corporation because of the corporate rate cuts.

### New Tax Advantages

Almost all of the new tax breaks or advantages and "loophole closings" are to be applicable to 1964 income.



Among the new tax advantages provided by the 1964 law, the following will be discussed:

- (1) New minimum standard deduction
- (2) Averaging of income
- (3) Liberalization of the investment credit
- (4) Liberalization of the capital gains provisions
- (5) Expansion of the dividend exclusion
- (6) Inclusion of several more liberal provisions for older persons
- (7) Allowance of the installment method of reporting income to the revolving credit charge accounts of merchants

#### The New Minimum Standard Deduction

In the 1964 law, there is now a new minimum standard deduction in addition to the familiar 10% standard deduction. Every taxpayer, no matter how small his income, can now choose between either the new minimum standard deduction or a standard deduction of 10% of his adjusted gross income, whichever is greater, up to a maximum of \$1,000.

The new minimum standard deduction is \$300 for a single taxpayer; \$400 for a married couple filing jointly. An additional \$100 deduction can be claimed for each dependent up to a maximum of \$1,000. And these deductions are in addition to the \$600 personal exemptions. All taxpayers still retain the option of itemizing their deductions if their total exceeds the \$1,000 limitation under the standard deduction.

Most of the benefits from the new minimum standard deduction will go to families with incomes below \$5,000. The low income level of many farm families will make them prime beneficiaries of this change. It is estimated that the new minimum standard deduction will give about 1.5 million lower-bracket families a 100% federal income tax cut.

#### Income Averaging

The 1964 law is creating an entirely new tax benefit in the form of income averaging. This break will offer tax advantages to anyone with a sharply fluctuating income--and it won't matter whether the income is from salaries, commissions, sales of merchandise, dividends, interest, or even short-term capital gains.

Although the income averaging principle was sought most actively by professional athletes, entertainers, writers, and others with sharply fluctuating income, the 1964 law offers the tax advantage to anyone--businessmen, professional men, farmers, employees, or even market speculators who make a quick "killing."

Returns from farming often vary greatly from year to year, depending on the uncertainties of the weather, changes in farm prices, and other factors. In some farming areas, it is not unusual for a farm to produce relatively little income for several consecutive years, and then make it up in one favorable year. Farmers in these areas must depend upon their earnings in good years to carry them through bad years.

A farmer having a taxable income of \$20,000 in 1965 would pay a tax (at 1965 rates) of \$4,380. But, if his taxable income had averaged \$6,000 for the preceding 4 years, he could, by using the new averaging provisions, reduce his tax to \$4,020, a tax saving of \$360.

Heretofore, the revenue laws, by taxing income received in the occasional highly profitable years at high rates, in effect, penalized individuals with such fluctuating incomes. The income averaging break reduces the extra tax due to the pyramiding of a lot of income into 1 year by, in effect, treating the unusually large amount as though it were received over 5 years.

The tax saving resulting from averaging depends upon the amount a taxpayer's income varies, and the size of his income. The averaging provision applies to that income received in any year that exceeds by more than one-third the average income of the previous 4 years. The provision does not apply unless at least \$3,000 is to be averaged; but, in cases involving only a moderate fluctuation in income, averaging relief is not too important anyhow.

Here's how income averaging works: First, determine your average taxable income for 1960-1963. Say it comes to \$6,000. Then, multiply the \$6,000 by 133%--this comes to \$8,000. Now determine your 1964 income. If this isn't more than \$3,000 above the figure you arrived at--\$8,000--you are not permitted any income averaging relief. But, let's say you earned \$24,000 in 1964. Since this is \$16,000 more than the \$8,000, you qualify, and you can use income averaging on the \$16,000. Instead of calculating your 1964 tax on \$24,000, it would be on \$8,000 plus \$16,000 divided by five.

This provision is admittedly complex, and the reasonably easy job of income averaging and computing the tax can become complicated if there are capital gains in current or past years, or if there is income from inherited property, or if there is property received as a gift. But, despite the complications, the income averaging break is important. The key point to note is that income averaging is virtually equivalent to a one-shot deal every 5 years. And, it's important to plan to make the most of that one shot.

### The Investment Credit

The 7% investment credit, enacted in 1962, has been modified somewhat by the Revenue Act of 1964. The investment credit, as originally enacted, allowed the purchaser of new or used equipment purchased after December 31, 1961, having a useful life of at least 8 years, to take 7% of its cost as a credit against his tax liability. However, the taxpayer was also required to subtract the amount of the credit from the cost of the asset in order to determine the tax deductible depreciation.

The new law provides that the depreciation base for eligible property placed in service after December 31, 1963, will not be reduced by the amount of the credit. The result of this change will be to reduce the farmer's and businessmen's tax liability somewhat and to increase the rate of return on his investment.

### Capital Gains

Heretofore, individuals were permitted to offset capital losses only against capital gains, plus an offset of up to \$1,000 against ordinary income. Capital losses exceeding the sum of these two items could be carried over for 5 years and be used to reduce subsequent income. The new law drops the 5 year limitation on carrying over capital losses of individuals.

Certain capital gains changes, as originally proposed, were not enacted into law. These were: (1) to extend the short-term holding period from 6 months to 1 year, (2) an imposition of a capital gains tax on assets transferred at death, (3) a redefinition of capital gains provisions regarding livestock, and (4) a reduction in the rates applicable to capital gains.

### Dividend Exclusion

The 1964 law has changed the dividend exclusion and the dividend credit applicable to corporate dividends in a way which will help millions of taxpayers, while hurting a much smaller number of stockholders.

The new tax law reduces the 4% dividend credit to 2% in 1964 and to zero in 1965. At the same time, though, the law doubles the dividend exclusion so that a taxpayer can receive up to \$100 of dividends a year tax-free--which means up to \$200 for a husband and wife on a joint return.

While these provisions will hurt some higher-bracket taxpayers, for millions of middle and lower-bracket persons the doubled exclusion is a fine opportunity to collect dividend income free of federal income tax.

### Special Advantages for Older Persons

The first important new break the 1964 law affords older persons is the allowance of a higher limit on the amount of retirement income on which the retirement income credit is based. And this amount is a direct credit against the income tax liability of the older person.

A second important tax break for older persons involves medical expense deduction. Under the new law, all medicines and medical expenses will be deductible without a consideration of any portion of them as necessary living expenses, and therefore non-deductible.

Thirdly, under the new law the profit from a house sold after 1963 by a person 65 or over for a price of \$20,000 or less is exempt from tax--and, if the price is higher than \$20,000, a portion of the profit is tax-exempt.

Since South Dakota has quite a sizable number of older persons within its total population, these liberalized provisions for the older citizen should increase South Dakota's disposable income appreciably.

### Revolving Credit Charge Accounts

If a businessman in a retailer selling on the so-called "revolving credit" plan, the new law may help him add substantially to his working capital.

The reason is that a businessman who sells his merchandise on installments and reports the income from these sales on the installment basis only pays taxes on his profits as he collects payments due. In a business which normally has large amounts of uncollected installment receivables outstanding at the end of each year, the deferment of tax from installment reporting of income can add up to big-time money.

The 1964 law flatly makes "revolving credit" plan sales eligible for installment reporting. If a South Dakota businessman is a retailer who sells on a revolving credit type charge account, he should study carefully the advisability of switching to the installment method of reporting his income. He may be able to increase his working capital considerably by deferring his tax, and it will also keep the money in South Dakota.

### Previous Tax Advantages No Longer Allowed

On the other side of the picture, there are the new provisions in the 1964 Revenue Act which limit or take away tax breaks we, as taxpayers, have enjoyed in the past. Here are some of the advantages being taken away:

(1) The amount of state, local, and foreign taxes that an individual taxpayer will be able to deduct when he prepares his 1964 return has been reduced. For example, state cigarette taxes, state beverage taxes, motor vehicle license plates, and drivers' licenses are no longer deductible.

The individual taxpayer will still be able to take itemized personal deductions for sales taxes, real property taxes, state gasoline taxes, state income taxes, and personal property taxes.

But, even the ones above that have been made nondeductible, are still deductible if they are paid in connection with a business operation or in the production of income.

(2) Casualty losses, not reimbursed by insurance, are still deductible above \$100. And the \$100 deductible rule doesn't apply to each piece of property destroyed or damaged, but to each casualty.

But, if a taxpayer were to use his car one-half for business and one-half for pleasure, the damage to the business one-half would be fully deductible, while the damage to the personal portion would be subject to the \$100 deductible rule.

### Bearing on State and Local Revenue

Total state and local taxes doubled in the decade from 1952 to 1961, and have been increasing at an average rate of 7% per year. Farmers and businessmen have borne a share of these increases. For example, farm real estate taxes rose to \$1.3 billion in 1961 from \$777 million a decade earlier. Thus, farmers and businessmen

have a direct interest in any measure that affects state and local revenues.

The United States Treasury has estimated that when the tax cut is fully in effect in 1965, it will generate a large increase in total national output. The increase in economic activity is expected to add about \$1.5 billion a year to total state tax revenues and approximately \$1.4 billion to local tax revenues. This increase in state and local revenues, arising without an increase in rates or new taxes, should relieve financial pressures somewhat on these governments.

#### Benefits from General Economic Stimulation

In addition to the rate cuts, to the new and improved tax advantages, and to the expected eventual increase in state and local tax revenues, significant benefits to agriculture and business are expected to result from the general economic stimulation induced by the new tax law. Also, South Dakota youth may find greater opportunities for employment in the State; and nonfarm job opportunities for South Dakota farmers may be enhanced to provide a source of supplemental income. If these expected developments occur in the near future, it will be of special significance to South Dakota, since in the past the State has lost many of its most promising youth to other states, and nonfarm job opportunities for South Dakota farmers have been relatively limited.

In summary, both farmers and businessmen, senior citizens, and the youth of South Dakota should benefit from the Revenue Act of 1964 by having their taxes reduced, and by the increased economic opportunities that will, it is hoped, result from the general economic stimulation provided by law.

## ACTIVITIES OF THE ECONOMICS DEPARTMENT

The aim of the Economics Department is to help both farm and city people to achieve higher levels of living. To this end, it has three main areas of effort - instruction, research and extension education.

The department teaches both general and agricultural economics. Nearly all students on the campus take a course in citizenship economics. A large proportion of the students are taught the principles of business law, business and farm management, and accounting. Each year an increasing number of students major in economics.

Most of the teachers also do some research. Much of this research is in the field of agricultural economics. However, some of it - such as in the areas of taxation and marketing - affects both farm and city people. Reports are published as bulletins, circulars, or pamphlets. A bi-weekly "Economics Newsletter" is issued free to a large mailing list through the Agricultural Extension Service.

The Extension Economists work closely with the research staff of the department. This makes it easier for them to extend the teaching function of the department and to carry to the people of the State the latest developments of research and the application of economic analysis.

This publication is the result of a staff effort to bring research results and accumulated knowledge to bear on a particular problem for the Third Annual Agri-Business Day conducted on campus by the Department.

## SOME RECENT PUBLICATIONS OF THE ECONOMICS DEPARTMENT

### Bulletins

B	488	Farm Plans for Wheat Farmers in North Central South Dakota	Rex D. Helfinstine	1960
B	494	Economic and Organizational Aspects of Cooperative Feedlots	Gerald E. Marousek & Harlan J. Dirks	1961
B	497	Procurement Policies and Practices of Dairy Manufacturing Plants in Eastern South Dakota - Part I Market Structure and Behavior	Ralph E. Nelson & Travis W. Manning	1961
B	498	Procurement Policies and Practices of Dairy Manufacturing Plants in Eastern South Dakota - Part II Managerial Decision Making	Travis W. Manning & Ralph E. Nelson	1961
B	510	Farm Tenancy Problems in South Dakota	Russell L. Berry	1963

### Circulars

C	142	Planning a Father-Son Partnership	Charles H. Benrud	1958
C	145	Some Considerations for a South Dakota State Income Tax	John E. Thompson	1959
C	150	Financing Cooperatives with Revolving Funds	Robert J. Antonides	1961
C	158	How to Use the New County Share Rent	Russell L. Berry	1964

### Pamphlets

P	114	Cost of Producing and Marketing Finished Beef in Relation to Consuming Areas	Dwayne A. Myers	1963
P	115	Marketing and Other Factors Affecting the Cattle Feeding Enterprise in Eastern South Dakota	Gerald E. Marousek	1963
P	116	Variability of Feed Grain Beef Cattle Systems in South Dakota	Edward Dailey	1963
P	118	An Appraisal of the Use of Soil Survey Information as the Basis for Valuing Land for Tax Purposes in Spink County, South Dakota	Donald D. Patterson	1964
P	119	Community and Commercial Benefits from Water Resource Development of the Oahe Area	Rex D. Helfinstine	1964
P	120	International Trade in Cattle and Beef Products with Emphasis on the Effects of the European Economic Community on the South Dakota Economy	Harold F. Bjarnason	1964